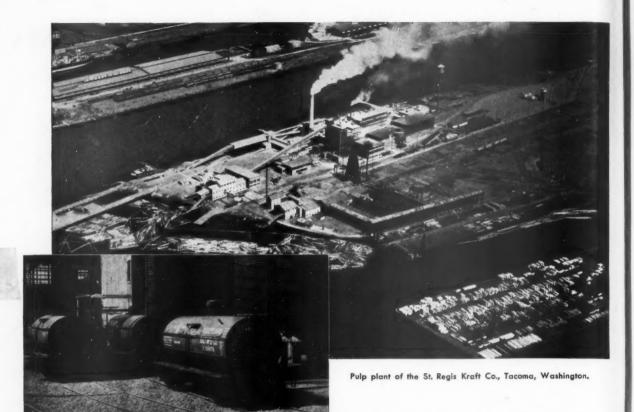


Pacițic PULP& PAPER Industry

December • 1939



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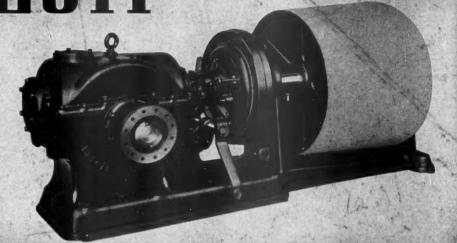
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DECEMBER • 1939

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DECEMBER • 1939

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International Pulp Situation-Imports Continue Increase

Pulp deliveries from Scandinavian countries and Canada increase 34.7 per cent during October-situation not yet clarified-shipping difficulties experienced but no immediate shortage feared-supply from Finland imperiled by Soviet invasion.

THAT really is the pulp and paper situation in Europe and the Scandinavian countries, and what effect will it have on the industry in the United States? That is a question asked by many today, and answered by few. Current information appears to be based largely upon incomplete facts, speculation and personal opinion. After nearly four months of war in Europe, the outcome of its effects on pulp imports, on which the American paper industry is so dependent, is not yet clear.

There are, however, certain facts and indications which will be of interest in appraising the situation and

judging the future.

Contrary to the expectations of many people, wood pulp imports in October increased materially over those of preceding months. As a matter of fact, while imports increased 6.5 per cent in September over August, October imports from Finland, Sweden, Norway, and Canada rose over September by 34.7 per cent. This was the cause of some wonder on the part of many, since it had been felt that pulp shipments would be curtailed because of

To be specific, October imports of pulp from Sweden amounted to 88,561 tons of pulp, an increase of 52 per cent over September. Those from Canada increased 10.1 per cent to 75,255 tons. Imports from Finland dropped 15.9 per cent to 28,-281 tons, while those from Norway showed the big rise of 259.5 per cent. The total imports were 216,-142 tons from these countries as compared with 160,417 tons in September, an increase of 34.7 per cent.

The details are shown in the accompanying table which shows imports by type of pulp and country of origin for September and October, with the percentage of change from month to month. These figures, subject to revision, were released by the Forest Products Division, Bureau of Domestic Commerce, Department of Commerce.

Future Still Vague

 Although it was generally believed that October import figures would indicate more accurately what the true import situation is, such does not yet seem to be the case. It is not yet possible to definitely say what the future months will bring, except that it would appear that there is at present no threat of major proportions to the continued supply of pulp from the Scandinavian countries, with perhaps the exception of Finland. There apparently will be no pulp shortage in the United States for some months to come, although it is true that foreign sources cannot be too well depended upon, and American merchant mills are receiving more orders than they can supply.

There are several explanations for the heavy arrivals during October. In the first place, shipments are ordinarily heavy at this time of year in anticipation of the winter period during which Baltic and Arctic ports are ice bound. Secondly, numerous shipments had been held during September until it could be determined what the status would be of ships sailing the periled waters for the United States.

According to late information received from one of the staff of Pacific Pulp and Paper Industry, at the time in New York City, the consensus of opinion there is that the American pulp industry will be in a strong position for the duration of the war. If the war is short, a chaotic condition is likely to follow. If it is a long war, as now seems indicated, the American position will be strong almost indefinitely.

Of the September and October deliveries from foreign countries, about 75 per cent were on contracts, the remainder being to build up stocks in case of future shortages, and to take care of increased paper production which has come about as a result of the current war. While no serious shortage of pulp is anticipated, even in view of the Baltic 6

COMPARISON OF WOOD PULP IMPORTS

SEPTEMBER AND OCTOBER, 1939

Type of Pulp	Finl	and	Nor	way	Swe	den	Car	nada	To	tals
Mechanical unbleached	Sept. 3,096	Oct. 753	Sept.	Oct.	Sept. 3,314	Oct. 5,840	Sept. 17,164	Oct. 14,934	Sept. 23,574	Oct. 21,527
Bleached sulphite	13,417 7,531 8,963	13,293 4,771 8,795	1,111 2,538 553	2,565 12,150 393	22,297 3,217 22,111	38,232 7,780 31,694	12,307 26,018 7,249	18,060 30,864 5.800	49,145 39,785 38,876	79,397 56,398 47,539
Bleached sulphate	634	669	********		2,795	5,015	4,668 950	4,484 1,113	8,087 950	10,168
Totals Per cent of change	33,641	28,281	4,202	15,108	53,734	88,561	68,356	75,255	160,417	216,142
from previous month	+14%	-15.9%	-42% -	-259.5%	-19%	+52%	+52%	+10.1%	+6.5%	+34.7%

situation, it is felt that any possible shortage cannot possibly occur before next February or March. Should such a shortage take place, it will be due chiefly to increasing scarcity of cargo space and the Finnish situation. Freight rates, another factor, have been rising erratically and cannot be predicted for the future.

Shipping Difficulties

• It now requires about two months to make a round trip to the United States from the Swedish Baltic ports, due to German inspections westbound and British inspections eastbound. One importer is reported to have pulp on a dozen ships which, at the time of the report (December 8), had been held for two weeks and were still detained. As a result of these difficulties, many of these ships, mostly tramp steamers remaining in this service, are finding more profitable tonnage on safer routes. It is said that it is now even difficult to get cargo space from Gothenburg and Norwegian ports.

It is possible, however, that shipping difficulties will be smoothed in the future by an agreement between the importers, the State Department and the German government, announced recently by Carlton B. Overton, president of the Association of American Wood Pulp Imports. He said that the American importers of Scandinavian wood pulp, the state department and the German government have concluded an arrangement to expedite shipments to the United States through the use of non-re-export affidavits.

Mr. Overton said these affidavits, signed by United States consignees, will be accepted by the German government as evidence that the pulp will be retained in the United States and not re-exported to enemies of Germany.

The procedure has been worked out as follows: when a ship, loaded with a cargo of wood pulp, bound for the United States is about to sail, or has been seized by Germany, the sulphite pulp suppliers of the world, covering producers in the Scandinavian and Central European countries, cable to Mr. Overton's office a list of the consignees, the cargo and the name of the ship. Only ships carrying nothing but wood pulp are covered.

The American association communicates with the consignees here and obtains from them affidavits of non-re-export, which are sent to the Swedish legation in Washington. The legation in turn submits them to the state department.

When Ships Are Seized

• In the case of a seized ship, the state department informs the United States consul at Hamburg that it has in its possession the affidavits covering the complete cargo and the consul there approaches the authorities, which in one case may be a port official or in another instance, the prize court.

The same procedure is followed in the case of ships about to sail from a Scandinavian port, except that the United States state department advises its legation at the port of embarkation that full affidavits have been received. The legation then gives the master of the ship a certificate to the effect that affidavits of non-re-export are in the hands of the state department. This is the master's evidence, if stopped by a German war vessel, that the full cargo is bound for the United States and that none of it will be shipped out of the country.

Since Finland is the source of approximately 15 per cent of our total wood pulp imports, her position at this time is of particular interest. With Soviet Russia attacking strongly, it is possible that the pulp industry may shortly be paralyzed, by occupation and blockade. Should the Soviets succeed in overrunning the country rapidly, the mills may be saved and operation continued under new management. In the latter case, how much American paper mills would be willing to buy would be problematical.

Report From Finland

 It is perhaps best summed up at the time of going to press by a press dispatch from Helsinki, which says.

says,
"Finland's pulp and paper industry, much of it located close behind the battle lines in Karelia, is being threatened by advancing Soviet troops and by the Russian blockade of the Finnish coast.

"The pulp and paper mills, which are a mainstay of Finnish export trade and a big source of newsprint, have not closed down a single day since war began. Russian planes were reported to have attempted to bomb the mills, without success.

"Finnish troops have been putting up a desperate and apparently successful fight to hold the invading Red army short of the Karelian district in which the bulk of the paper industry is centered. Unless that defense breaks down, it is believed the mills will continue to operate normally.

"Transport difficulties caused by the German navy in the Baltic Sea and Soviet forces on the Arctic Ocean have cut off the usual sea routes of Finnish trade, but the Finns have been energetically organizing practicable, though costly, export outlets through Norway and Sweden

- "The Germans have sent more than 15,000 tons of Finnish paper pulp and cellulose to the bottom of the Baltic and North Sea since hostilities began. They have also stopped 15 Finnish ships loaded with wood products and confiscated the cargoes. The ships are still detained. This situation made the Baltic a precarious route for Finnsh trade even before the Russian invasion.
- "In their effort to solve the German threat, the Finns some time ago made successful, though small scale, efforts to get their paper and pulp out through Swedish and Norwegian ports, especially the Swedish port of Gotesborg at the mouth of the Kattegat Strait."

Superintendents Hold Annual Fall Meeting at Portland

• Practical operating superintendents of the Pacific Coast gathered at Portland December 1 and 2 for the fall meeting of the Pacific Coast division of the American Pulp and Paper Mill Superintendents Association, putting in two days of entertaining and instructive activity.

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Superintendents and their wives began gathering at the Portland Hotel Friday morning and afternoon, where registration was by E. G. "Sid" Drew and John Hoffman of Drew and Hoffman, under the eagle eye of general chairman Ray Smythe. By the time final registration had been completed, more than 125 were on the list. At the Saturday banquet approximately 200 were present, making a fine record for the convention.

During Friday afternoon, those who wished made mill visits at the mills of the Crown Willamette Paper Co. division of Crown Zellerbach Corporation at Camas, Wash., and West Linn, Ore., the Columbia River Paper Mills, Vancouver, Wash., and the Hawley Pulp & Paper Co. at Oregon City. A few hardy members braved the moist chill weather to play golf at the Alderwood County Club, while a larger group bowled near the hotel.

Costume Dance Friday

• The formal business meeting did not open until Saturday morning, so on Friday night the crowd gathered for the customary costume dance in the hotel grill room. They danced until one a.m. to the tunes of a lively orchestra and enjoyed the fun afforded by the varied costumes, most of which are shown in pictures in this issue. The prize for the best man's costume was won by Mrs. L. S. McCurdy, wife of L. S. McCurdy,



RAY SMYTHE General Chairman

of National Paper Products Co., Port Townsend, who dressed as a very realistic tramp and chewed a cigar. Her prize was a bottle of champagne. The ribbon for the best woman's costume was taken by Charles Frampton, superintendent of the California Fruit Wrapping mills, Pomona, Calif., who came as

a drum majorette and amused the gathering all evening. By taking the woman's prize, he won a coffeemaker set.

As has become a custom with the Pacific Coast section, Saturday morning opened with a stag breakfast in the grill room at 8:30 a.m., Ray Smythe opened it up and, in the absence of Nils G. Teren, who was obliged to be out of town, turned the meeting over to Zina A. Wise, perennial master of ceremonies at such affairs. "Zinc" first fined the latecomers and then introduced first vice-chairman Anton Siebers and second vice-chairman Niles Anderson, followed by a past chairman, Ray Onkels and "our lady friend" Charley Frampton of Pomona, as well as L. S. McCurdy, fourth vice-president of the national association.

The speaker of the morning was George W. Craigie, association field secretary from Cumberland Mills, Maine, who brought to the meeting the greetings of Howard H. Harrison, president of the national. This was the seventh divisional meeting he had attended this fall, he said.

After tracing the aims and purposes of the association, he suggested an increasing usefulness of the organization through acquainting the executives of the pulp and paper companies with the work of the group and the vital mill problems which are discussed, without secrets being disclosed. He proposed that the executives be invited to become associate members. He also stressed



The head table at the superintendents' banquet . . . left to right, G. S. Brazeau, manager of the Weyerhaeuser Timber Co., pulp division, Everett, Wash.; Merrill E. Norwood, paper mill superintendent for the Columbia River Paper Mills; George W. Craigie, field secretary of the national association; Mrs. L. S. McCurdy; Anton Siebers, chairman of the Pacific Coast Division and paper mill superintendent for the Longview Fibre Co.; Ray Smythe, general chairman of the convention; Mrs. Anton Siebers; L. S. McCurdy, past chairman, and paper mill superintendent of the National Paper Products Co.; Niles Anderson, first vice chairman and assistant superintendent of St. Regis Kraft Co.



ANTON SIEBERS Elected Chairman

the practical value of the benefits that can be obtained from ideas created at these meetings.

Three Fine Papers

• The formal meeting at which prepared papers were presented was held following the breakfast. Anton Siebers, first vice-chairman, presided in the absence of E. W. G. Cooper, chairman, who was unable to attend because of illness.

The first paper submitted was that of Erik Ekholm, general superintendent of the Puget Sound Pulp and Timber Co., Bellingham, Wash., who spoke on the subject of "Practical Observations on Flat Screen Operation." His paper appears in full elsewhere in this issue.



GEORGE W. CRAIGIE, Field Secretary of the National Association.

"Wet Strength of Groundwood" was the subject of Kenneth C. Logan of Pacific Mills, Ltd., Ocean Falls, B. C., whose paper also appears in this issue. Mr. Logan illustrated his talk with a large diagram, and afterwards answered questions concerning their method of testing, a matter in which much interest was shown.

The third interesting paper was that on "Development in Paper Machines, 1930 to 1940," by J. E. Goodwillie of the Beloit Iron Works. Since Mr. Goodwillie was delayed in the East and unable to attend, his paper was read by Mr. Siebers. This paper is also to appear in this journal.

A stag luncheon was staged Saturday noon, with Dr. Frank Munk of Reed College as the principal speaker. Dr. Munk was formerly advisor for the Czechoslovakian Paper Cartel, a resident of that country, and gave "An Intimate Discussion of European Affairs. He expressed the opinion that in the future, one after one of the competitors of the United States pulp and paper industry would be dropping out, and that therefore the prospects for the domestic industry are very good.

Open Forum Held

• Following the luncheon, the afternoon session was the usual superintendents' open forum, at which common operating problems were discussed. Among the questions discussed was the problem of avoiding two-sidedness on a machine using suction equipment; the best plastometer rubber to use on a pressure roll that applies the sheet to a Yankee dryer; grinding of calendar rolls; the value of electric whiteness testers in controlling the whiteness of bleached pulp, and similar practical problems that confront the paper mill superintendent.

During this time the ladies were entertained at a stagette luncheon at the Aero Club, and later with tea at the hotel. In the evening they met with the men at the rendezvous in the Mirror Room at a reception honoring George W. Craigie, the national field secretary.

New officers of the Pacific Coast Division were elected at the business meeting. Anton Siebers, paper mill superintendent of the Longview Fibre Co., Longview, Wash., was selected as chairman, having previously served as first vice-chairman and second vice-chairman.

The new first vice-chairman is Niles Anderson, assistant superintendent of the St. Regis Kraft Co.,

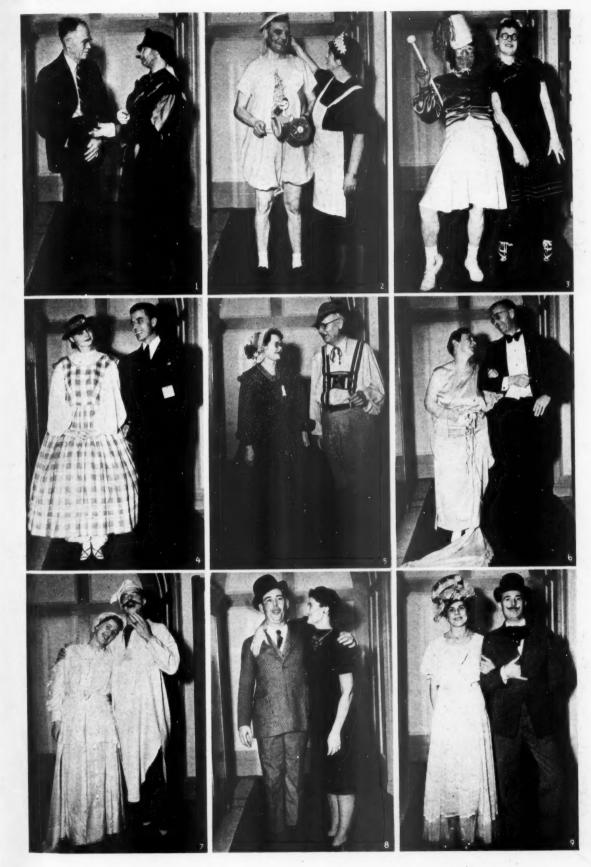
Tacoma, who was elevated from the post of second vice-chairman.

To serve as the new second vicechairman, the association elected Merrill E. Norwood, paper mill superintendent of the Columbia River Paper Mills, Vancouver, Wash.

Albert S. Quinn, vice-president of the Stebbins Engineering Corporation of Seattle was again re-elected

ON THE OPPOSITE PAGE At the Superintendents' Costume Party

- (1) "Brother can you spare a dime" begged Mrs. L. S. McCurdy of her benevolent husband. Yes, it actually is Mrs. McCurdy, and she won first prize as the best dressed man.
- (2) "Come along, bad boy" admonished Mrs. Onkels to Ray Onkels when she caught him in rompers. Note the dimpled knees.
- (3) "Step high, wide and handsome," says Charley Frampton, the drum majorette, with Mrs. Wallace Painter, bathing beauty of eighteen hundred and something. Charley took top honors as the best dressed lady.
- (4) Looks like Priscilla about to say "Speak for yourself, John." It's Adele Hodges with Bill Gholson, who looks like he's about to speak.
- (5) A Tyrolean mountaineer smiles at his lady, who really isn't as old-fashioned as she looks. It's the Hodges again, Mr. and Mrs. Walter—. Fortunately, no mountains were handy.
- (6) "Happy days are here again." Ken and Frances Hall re-live the days of "I do," in remembering when.
- (7) Not bored, just sleepy in an old-fashioned night gown, is "Cholly" Belvin, who is about to dance another with the fair Ione and wish the red flannels were at home.
- (8) "Just a yokel," says Mrs. Tony Siebers to Bill Marshall, who had almost everybody almost believing it.
- (9) We're not sure whether he's a Mississippi gambler or just an old sport, but Mr. and Mrs. Paul Middlebrook made a handsome couple anyway.



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MERRILL E. NORWOOD
Elected Second vice chairman.

secretary-treasurer of the Pacific Coast division, to serve his third tour of duty.

The Annual Banquet

On Saturday evening the final dinner dance was held, with appropriate floor show entertainment. There being no official golf tournament, prizes were awarded during the banquet to the bowlers. Ray Onkels of New Westminster took the first prize, an electric toaster, and Anton "Tony" Siebers of Longview Fibre received the second prize, a drum. Charles Frampton of Pomona had third honors among the superintendents, while Roy Carey of National Aniline and Chemical Cotook the first prize among the salesmen.



NILES ANDERSON First Vice Chairman

Those who handled the arrangements for the successful gathering included the following; Ray Smythe, general chairman; E. G. Drew, registration; Don Shirley, golf; Roy S. Carey, entertainment; Wm. C. Marshall, bowling; Niles Anderson, Anton Siebers and E. W. G. Cooper, technical program; Nils G. Teren, stag breakfast.

The Ladies Committee was composed of Mrs. Roy S. Carey, chairman, Mrs. L. P. Fortier, Mrs. Erik Ekholm, Mrs. Anton Siebers, Mrs. Niles Anderson, Mrs. W. A. Kelly, Mrs. C. E. Braun and Mrs. Robert Bundy.

- Those who registered for the superintendents' meeting included the following:
- Mr. and Mrs. C. E. Ackley, Hawley Pulp & Paper Co., Oregon City; Mr. K. M. Ackles, Corn Products Sales Co., Portland; Mr. and Mrs. Fred Alsop, Van Waters & Rogers Co., Portland and Seattle; Mr. Warren Arnold, Pulp Division, Weyerhaeuser Timber Co., Longview; Mr. Niles Anderson, St. Regis Kraft Co., Tacoma; Mr. and Mrs. John E. Brown, Pacific Pulp & Paper Industry, Portland; Mr. Thomas A. Bruce, Corn Products Sales Co., San Francisco; Mr. M. W. Black, Inland Empire Paper Co., Millwood; Mr. and Mrs. A. L. Bibbins, Electric Steel Foundry Co., Seattle.
- Mr. and Mrs. C. H. Belvin, Chromium Corp. of America, Portland; Mr. and Mrs. C. V. Bascom, Portland; Mr. G. C. Brewster, Northwest Screen Specialty Co., Shelton; Mr. and Mrs. R. A. Bremner, Electric Steel Foundry Co., Portland; Mr. C. E. Braun, Hawley Pulp & Paper Co., Oregon City; Mr. G. S. Brazeau, Pulp Division, Weyerhaeuser Timber Co., Everett; Mr. and Mrs. R. E. Chase, R. E. Chase & Co., Tacoma; Mr. R. E. Chase, Jr., R. E. Chase & Co., Portland; Mr. G. W. Craigie, American Pulp & Paper Mill Superintendents Association, Cumberland Mills, Me.
- Mr. and Mrs. R. S. Carey, National Aniline & Chemical Co., Portland; Mr. and Mrs. J. E. Cater, Hawley Pulp & Paper Co., Oregon City; Mr. and Mrs. John M. Carlson, Soundview Pulp Co., Everett; Mr. D. H. Cook, Chase Brass & Copper Co., Seattle; Mr. O. S. Cauvel, Washington Pulp & Paper Corp., Division of Crown Zellerbach Corp., Port Angeles; Mr. Jim Coy, E. J. Bartells Chemical Co., Portland; Mr. A. C. Dunham, Griffith Rubber Mills, Portland; Mr. and Mrs. J. V. B. Cox, Hercules Powder Co., Paper Makers Chemical Co. Division, Portland; Mr. and Mrs. E. G. Drew, Drew & Hoffman, Portland.
- Mr. R. E. Drane, St. Helens Pulp & Paper Co., St. Helens; Mrs. A. C. Duncan, Portland; Mr. C. J. Elwell, Paper Industry, Chicago; Mr. E. Ekholm, Puget Sound Pulp & Timber Co., Bellingham; Mr. & Mrs. William Einzig, Portland; Mr. Charles G. Frampton, California Fruit Wrapping Co., Pomona, Calif.; Mr. G. M. Fowler, Powell River Co., Powell River, B. C.; Mr. and Mrs. L. P. Fortier, Everett Pulp & Paper Co., Everett; Mr. L. G. Fear, Westinghouse Elec. & Mfg. Co., Portland.

Mr. and Mrs. W. R. Gibson, Northwest Filter Co., Seattle; Mr. B. R. Gardner, Pennsylvania Salt Mfg. Co. of Washington, Tacoma; Mr. T. H. Grant, Columbia River Paper Co., Vancouver, Wash.; Mr. and Mrs. W. S. Hodges and Miss Adele Hodges, Appleton Wire Works, Portland; Mr. W. F. Hynes, General Electric Co., Portland; Mr. and Mrs. J. A. Harris, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., West Linn; Mr. and Mrs. H. R. Heuer, Pulp Division, Weyerhaeuser Timber Co., Longview; Mr. Clyde F. Holcomb, Edison Storage Battery Co., Seattle.

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- Mr. J. S. Hoffman, Drew & Hoffman, Portland; Mr. and Mrs. Kenneth B. Hall, Improved Paper Machinery Corp. and Noble & Wood Machine Co., Portland; Mr. Theodore B. Horn, Corn Products Sales Co., Portland; Mr. A. D. Hawley, Pacific Coast Supply Co., Seattle; Miss Louise Howell, Portland; Mr. A. H. Hooker, Jr., Hooker Electrochemical Co., Tacoma; Mr. Jack Johnson, Philadelphia Felt Co., Portland; Mrs. J. E. Johnson, Portland; Mr. Ray Johnson, Pulp Division, Weyerhaeuser Timber Co., Everett; Mr. J. G. Jenkins, Hawley Pulp & Paper Co., Oregon City.
- Mr. W. Norman Kelly, Pulp Division, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. W. A. Kelly, Waterbury Felt Co., Portland; Mr. E. E. Kertz, J. W. Bolton Co., Portland; Mr. F. W. Kohler, Kohler System Co., Chicago; Mr. J. D. Kaster, Oregon Pulp & Paper Co., Oregon City; Mr. C. M. Linden, Pulp Division, Weyerhaeuser Timber Co., Everett; Mr. A. H. Lundberg, Seattle; Mr. and Mrs. K. C. Logan, Pacific Mills Limited, Ocean Falls, B. C.; Mr. and Mrs. E. E. Logsdon, Hawley Pulp & Paper Co., Oregon City; Mr. Gordon Law, Oregon Journal, Portland.
- Mr. R. V. Maier, General Electric Co., Portland; Mr. J. E. McQuaid, Griffith Rubber Mills, Portland; Mr. and Mrs. William C. Marshall, Heller & Merz,, Portland; Mr. and Mrs. L. S. Mc-Curdy, National Paper Products Co., Division of Crown Zellerbach Corp., Port Townsend; Mr. and Mrs. Paul Middle-



A. S. QUINN Reelected Secretary-Treasurer

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brook, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Lebanon; Mr. and Mrs. D. K. MacBain, Pulp Division, Weyerhaeuser Timber Co., Longview.

- Mr. W. E. MacGillivary, Powell River Co., Powell River, B. C.; Mr. and Mrs. R. W. Martig, Brown Instrument Co., Portland; Mr. and Mrs. C. J. McAllister, Simonds Worden White Co., Portland; Mr. Kyle Milligan, Northwest Lead Co., Seattle; Mr. H. N. Miller, Westinghouse Electric & Mfg. Co., Portland; Mr. T. E. Moffitt, Hooker Electrochemical Co., Tacoma; Mr. and Mrs. Ned Menzies, The W. S. Tyler Co., Seattle; Mr. S. Norman, Gillen-Cole Co., Portland.
- Mr. M. E. Norwood, Columbia River Paper Co., Vancouver, Wash.; Mr. A. G. Natwick, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; Mr. and Mrs. R. C. Onkels, Westminster Paper Co., New Westminster, B. C.; Mr. and Mrs. M. J. Otis, Crown Willamette Paper Co., Division Crown Zellerbach Corp., West Linn; Mr. F. A. Olmsted, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; Mr. H. E. Ostenson, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; Mr. Frederic M. Pape, Wilson & Geo. Meyer, Seattle; Mr. and Mrs. J. W. Peckham, Bristol Co., Seattle.
- Mr. H. H. Proseus, Johns-Manville Corp., Portland; Mr. M. M. Peterson, Pulp Division, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. W. A. Prier, Oregon Brass Works, Portland; Mr. and Mrs. R. S. Painter, U. S. Gypsum Co., Portland; Mr. E. R. Rasmussen, Consolidated Supply Co., Portland; Mr. H. H. Richmond, Electric Steel Foundry Co., Portland; Mr. James Ruck, St. Regis Kraft Co., Tacoma; Mr. and Mrs. Ralph Reed, Spaulding Pulp & Paper Co., Newberg; Mr. E. D. Rich, Oregon Pulp & Paper Co., Salem; Mr. J. P. Rubush, Swenson Evaporator Co., Chicago.
- Mr. Ray Smythe, Rice, Barton & Fales, Portland; Mr. Fred Shaneman, Pennsylvania Salt Mfg. Co. of Washington, Tacoma; Mr. Joe Shrawder, Krebs Pigment & Color Corp., Pasadena, Calif.; Mr. and Mrs. A. P. Siebers, Longview Fibre Co., Longview; Mr. and Mrs. Lawrence K. Smith, Pacific Pulp & Paper Industry, Seattle; Mr. P. E. Sullivan, Ingersoll-Rand Co., Seattle; Mr. W. A. Salmonson, Simonds Worden White Co., Seattle
- Mr. and Mrs. S. A. Salmonson, Soundview Pulp Co., Everett; Mr. V. E. Scott, Oregon Journal, Portland; Mr. Tr. M. Shields, Simonds Saw & Steel Co., Seattle; J. B. Symonds, Sinclair Wire Co., Seattle; Mr. and Mrs. C. Sholdebrand, Hawley Pulp & Paper Co., Oregon City;

Mr. D. L. Shirley, Link-Belt Co., Portland; Mr. F. Sturm, Oregon Pulp & Paper Co., Salem; Mr. Floyd Spencer, Hawley Pulp & Paper Co., Oregon City; Mr. A. K. Smalley, Carpenter Steel Co., Westfield, N. J.

- Mr. Brian L. Shera, Pennsylvania Salt Mfg. Co., Tacoma; Mr. C. F. Stevey, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; Mr. James Turek, Jr., Stein-Hall Mfg. Co., Portland; Mr. and Mrs. V. L. Tipka, Hawley Pulp & Paper Co., Oregon City; Mr. E. H. Tidland, Pacific Coast Supply Co., Portland; Mr. and Mrs. R. M. True, General Dyestuff Corp., Portland; Mr. Edward A. Vohs, Pulp Division, Weyerhaeuser Timber Co., Everett; Mr. and Mrs. A. S. Viger, Rayonier Incorporated, Shelton Division, Shelton; Mr. Z. A. Wise, Griffith Rubber Mills, Portland; Mr. T. J. Waltmon, Ohio Knife Co., Portland.
- Mr. and Mrs. William Williamson, Shuler & Benninghofen, Portland; Mr. L. F. Wray, Simonds Saw & Steel Co., Seattle; Mr. A. D. Wood, Crown Williamette Paper Co., Division Crown Zellerbach Corp., Camas; Mr. and Mrs. F. J. Weleber, Hawley Pulp & Paper Co., Oregon City; Mr. and Mrs. F. P. Wilder, H. Waterbury & Sons Co., Portland; Mr. E. A. Weber, Oregon Pulp & Paper Co., Salem; Mr. W. Yerian, Consolidated Supply Co., Portland.

Pulp Prices Rise As Costs Increase

Late in November several United States producers of sulphite pulp announced that the price of bleached sulphite pulp for the first quarter of 1940 would be \$60 per short ton, ex dock Atlantic ports, and the price of unbleached sulphite \$50 per ton. Other producers are expected to follow shortly.

The first quarter prices represent increases of \$10 per ton in the base price from the \$50 per ton price for bleached sulphite and the \$40 per ton price on unbleached sulphite prevailing during 1930

Costs have been rising, particularly since the European war broke out the first of September, and the \$10 per ton increase is aimed to offset the higher prices being paid for many raw materials and supplies, especially for wood. The announcement was generally expected by the converting mills, who recognize that pulp prices have not been on a profitable level since early in 1938.

Vancouver Rayon Plant Plans Face Delay

War has brought unforeseen difficulties in financing the Vancouver Rayon Silk, Ltd., project, according to managing director Paul Zuest. Mr. Zuest says that about \$200,000 will

Mr. Zuest says that about \$200,000 will be required to put the first units of the mill in operation. This figure will include \$100,000 working capital. When this amount has been raised he said that he had no doubt of being able to finance the balance.

"It isn't a question of having to go out and look for markets for the various articles that would be manufactured here," said Zuest. "Those markets already exist and in six months they will be much more extensive. The shelves of exporters now handling such materials are now practically empty."

Fernandina Mill Starts Operations

On December 1 the first bleached sulphite pulp of Southern pine was produced at Fernandina, Florida, by the new mill of Rayonier Incorporated, large Pacific Coast producer of dissolving wood pulps. Construction, which began in September, 1937, has been several times delayed by adverse conditions in the pulp and rayon industries.

To prepare for starting the mill in December, Rayonier, during October, transferred a number of operating men from its mills at Port Angeles, Shelton and Hoquiam to Fernandina. Among those who are now at Fernandina are. E. J. McGill, superintendent, from Hoquiam; Nulsen T. Widmann, shift superintendent, from Port Angeles; Charles Walton, shift superintendent, from Shelton; Joseph LaChance, shift superintendent, from Grays Harbor; Henry Miller, boss machine foreman, from Port Angeles; Gilbert Weighton, finishing room foreman, from Grays Harbor.

Ed Boner, bleacherman, from Grays Harbor; Earl Miller, bleacherman, from Port Angeles; Leland Friend, bleacherman, from Shelton; and Joe Lachionda, bleacherman, from Grays Harbor. A number of other men were transferred to Fernandina earlier.

E. H. Vicary, head of Rayonier's Central Engineering Department at Port Angeles, left in October for Fernandina to remain until the new dissolving pulp mill is in full operation.

Hays Rehm Appointed Branch Manager

Hays Rehm was recently appointed manager of the branch factory and sales office of the Western Paper Converting Co. in Los Angeles, according to an announcement by Lloyd Riches, vice-president and general manager of the company.

Mr. Rehm does not go to the new territory a stranger, having spent some time in that area for the company six years ago. Previous to his move to Los Angeles he was located in the Seattle office of the firm.

Coast Newsprint Price To Remain Same

While no official intimation has been made yet, it is expected that the two Pacific coast producers of newsprint. Powell River Company and Pacific Mills, Ltd., in British Columbia, will follow the example of International Paper Company and other eastern mills in continuing to sell at \$50 a ton during the first half of 1940.

The Pacific coast mills during the past few years have adhered pretty closely to the price levels established in the east.

Sulphite pulp producers in British Columbia will probably share in the price improvement going into effect for 1940 contracts, but executives of B. C. Pulp & Paper Company said that no definite announcements of price policy had been made. The eastern mills which recently set prices at an advance of \$10 per ton on bleached sulphite usually make their announcement several weeks ahead of the B. C. mills.

"Builders of Rayonier" Honored at Service Pin Dinners

• In appreciation of the loyal service of its employees, and of the cooperation of the several communities in which the mills operate, Rayonier Incorporated last month held dinners at Port Angeles, Hoquiam and Shelton, at which five and ten year service pins were presented to approximately a thousand "Builders of Rayonier." It constituted concrete evidence of the fine relationship which exists between the operating employees and the management of the organization, which has been such an important factor in bringing Rayonier to its present outstanding position in the industry.

The first gathering was at Port Angeles on November 15, when nearly 300 of the mill men met at the Elks Club for dinner. At the head table were many dignitaries of the city and county and of the unions, as well as officials of the

company.

Arthur W. Berggren, Rayonier manager here, opened the meeting, introducing Norman B. Gibbs, who read a letter from E. M. Mills, president of the company, congratulating the group on the occasion and expressing hope for the future. He then turned the meeting over to "Beacon Bill" W. D. Welsh as toastmaster.

Present were three men who had flown great distances to be present at the meeting. Eric Haegler, Brazilian representative of the company, had just arrived by plane from Rio de Janeiro. Alex R. Heron came in by air from Kansas City, while J. D. Zellerbach had flown from San Francisco. With few exceptions, these far travelers attended all of the meetings on the Olympic Peninsula that week.

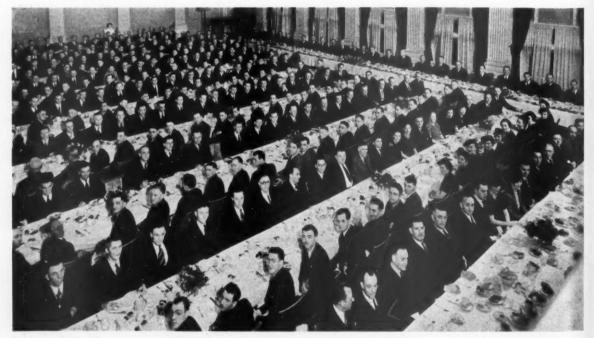
• After the introduction of guests, Ferd Schaaf, representing the State of Washington and Governor Martin, spoke on the pulp and paper industry, and its importance to the state on its 50th anniversary. A spirit of youth typifies the industry, as it does the state, he said, predicting continued growth and development.

J. D. Zellerbach, vice president of Rayonier Incorporated, was on hand to present the pins, after briefly tracing the history of Rayonier and the part those present had in building it. He called attention to the fact that 21 communities in Washington and Oregon depend primarily upon the pulp and paper industry for their major income. In these states, Crown Zellerbach alone spends more than \$10,000,000 a year, aside from machinery and logs, he said, while Rayonier spends \$3,500,000 annually for similar supplies.

He told the men how Rayonier started, with a production of 125 tons of pulp per day. As of January 1, he said, when the Fernandina mill gets started, the company will be turning out over 1,000 tons per

day.

Thursday noon, November 16, nearly 200 business men of Port Angeles met at the Lee hotel to celebrate "pulp and paper day." It was a combined meeting of the Chamber of Commerce, Kiwanis, Active Club, Rotarians, Young Business Men's



A typical view of one of the dinners honoring "Builders of Rayonier." This one is that at Hoquiam, where about 400 of them received their service pins.

AT THE RIGHT . . . At the top we see, left to right, Arthur W. Berggren, resident manager of Rayonier Incorporated at Port Angeles; J. D. Zellerbach, executive vice president, and W. Lloyd Raymond, vice president in charge of sales.

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Studying the booklet
"Builders of Rayonier"
are Jack Bagwill, personnel manager; Eric Haegler, Brazilian representative; J. D. Zellerbach; F.
C. Taylor, Japan representative; Lyall Tracy, assistant manager of the Hoquiam mill.

Here we have Wm. D. Welsh, Lyall Tracy, J. D. Zellerbach, Governor Clarence D. Martin and W. L. Raymond.

Left to right is Norman Gibbs, manager of manufacturing for the Northwest plants; Norman Tracey, president of the Paper Makers Local No. 269; V. J. Robinson, county assessor; George Cropper, general superintendent of the four mills, and John Sherman, vice president of the international union.

At Shelton the camera found, left to right, Otto Hartwig, social security advisor; Martin Mammen, safety supervisor; Wm. D. Welsh of the industrial relations department; Robert McDonald, president of the local union; Robert Williams, personnel manager at Shelton, and A. R. Heron, director of industrial relations for Crown Zellerbach Corporation.











Club, etc. Pulp and paper officials present included Mr. J. D. Zeller-bach, W. L. Raymond, N. W. Brisbois, M. B. Houston, Eric Haegler, Robert Bundy, Arthur Berggren, Ray Dupuis, John Sherman, Norman Gibbs, etc.

Speaker for the event was A. R. Heron, director of industrial relations for the Crown Zellerbach Corporation and Rayonier Incorporated, who spoke on Port Angeles and the value of its varied industries.

• To remind J. D. Zellerbach of the regard and appreciation of Port Angeles citizens, the civic group presented him with a handsome desk pen set, with a plaque inscribed commemorating 21 years of service to Port Angeles and with three service pins attached, one for each mill.

The Rayonier meeting at Hoquiam was held Friday evening, November 17. Lyall Tracy, assistant manager, presided in the absence of W. S. Lucey, resident manager. Mr. Mills' message was read by Mr. Welsh to the group of 399 men and women who received service pins that night. Company officials and local government representatives were introduced.

Governor Clarence Martin was on hand to lend his voice of congratulation to the group and to express optimism for the future of the industry. Following his address, Mr. Zellerbach presented the service pins to the 157 receiving 10-year pins and the 242 who had earned their five-year pins.

The Shelton gathering was held Saturday night, November 18, when some 275 "Builders of Rayonier" heard operating manager George Cropper open the meeting and call on general manager D. B. Davies, who called attention to the importance of personnel and organization over that of plant and machinery in making high grade pulp.

Mr. Justice Walter Beals of the Washington Supreme Court was the speaker of the evening, emphasizing the important contribution Rayonier employees are making to the Northwest country. A. R. Heron also spoke, complimenting the men and women of Rayonier on their years of service, and speaking of the fine relationship between employees and the company.

• Some 12 or 15 "pioneers of Rayonier" who had been with the company since its inception, were called on to stand and receive the plaudits of the assembly.

Service pins were, as at the previous meetings, personally presented by Mr. Zellerbach, shaking hands with each member of the staff.

The meetings brought to all of the service pin employees a more intimate acquaintance with the executives of the company, and to the management an increased appreciation of the important part the operating employees play in the success

of the company. The "Builders of Rayonier" who received service pins at the various dinners were as follows:

Grays Harbor Division

Grays Harbor Division

* Ten-Year Service Pins

• D. O. Ackerson, Carroll Agee, D. Alwood,
A. A. Anderson, Art Anderson, E. G. Anderson,
G. M. Atkinson, John W. Bagwill, Chas. D.
Baker, Geo. Barber, Joe Batinovich, J. Bartules,
C. J. Baulig, C. Bishop, S. Blackmore, A. S.
Boag, John Bocak, John Bozak, Wm. E. Breitenbach, Geo. Brown, W. S. Brown.

• G. Bunker, G. W. Campbell, Ture Carlson,
F. W. Carpenter, Frank Chase, R. E. Chausse,
Louis Chorba, C. F. Clark, W. G. Clayton,
Geo. A. Corum, T. W. Corsan, Thos. Coombo,
J. E. Diamond, John Dobosz, L. Dombroki,
M. F. Dole, M. A. Dore, F. E. Drake, Frank
Dressel, F. Drowsby, Chas. Edwards, James
Esdon, Elmer Everson, John Farnus, Edward
Frick, E. Fulbright.

• H. Gallington, M. H. Gardner, R. T. Glaser,

• H. Gallington, M. H. Gardner, R. T. Glaser,

Esdon, Elmer Everson, John Farnus, Edward Frick, E. Fulbright.

9 H. Gallington, M. H. Gardner, R. T. Glaser, A. Gozenski, Clyde Green, R. O. Hatch, Larry Hay, Arnold Hegg, Carl Heikkinen, T. Hendrickson, Hubert Higgens, Henry Hoegg, August Holm, Gertrude Holsinger, Geo. A. Holt, R. Hotchkiss, Perry Jackson, H. Jassman, J. A. Jette, Amel Johnson, S. Kilcup, Vernon Kilcup, Robert Kirkpatrick, J. E. Koski, Peter Krebs.

9 A. Lachiondo, J. B. Large, Reinhold Larson, N. Laughead, R. A. Laughlin, A. L. Leathers, J. Lesman, Alun Lewis, A. L. Lewis, Fred Linder, W. S. Lucey, A. T. Luther, John Lutzvich, W. R. McCabs, W. H. McClary Wm. McClary, O. R. McDonald, Floyd McFadin, E. J. McGill, R. J. McGrew, D. J. McMillan, T. A. McNamars, Mark Molone, J. Mannion, Frank C. Martin, Harry A. Meyer, Wm. Meyer, Carl Mieldich, Peter Mieldich, Frank B. Miner, Virl Moore, Henry Murphy.

9 H. O. Nelson, John Norberg, P. Norton, H. Obert, W. P. Orlowski, Chas. Palermo, P. D. Patterson, P. E. Pearson, O. Peterson, Lenus Pieffer, Art Pickett, D. W. Pinckney, I. R. Pinckney, Sophie Radinsky, J. Robertson, Rupert Rockwell, Ed Rogers, Frank Savina, Efron Schiller, D. E. Scott, Glen Scott, W. R. Scott, Harry Seeley, C. J. Smith, Dorothy Smith, Ralph Sneed, Frank Sommers, A. J. Staff, Kenneth Steilow, H. Stevenson, K. C. Stone, Emil Swanson.

Swanson.

• H. Tabor, Lionel V. Thomas, T. F. Thomson, Lyall Tracy, S. L. Turk, Chas. Walker, A. Waltenspiel, Fred Weckworth, J. Weiblen, G. Weighton, E. F. Wetzel, F. A. White, Harry Williams, Geo. Wood, Rand Wood, W. Worthley, J. F. Wuenschel, Stanley J. Young.

★ Five-Year Service Pins

** Five-Year Service Pins

** Harry A. Allen, Arleen Anderson, Richard
Anderson, John Anger, Albert Antich, E. Antich, M. Atkinson, Harold Auvinen, Carl Backman, Charles Backman, G. Balderston, J. A.
Bayha, Phillip Beltico, Jr., Elton Bennett, Ann
Berg, Lester L. Bergeron, Fred Bird, Andy
Bockh, Andrew Bockh, Jr., John Bok, Karl
Bollerslev, Ed Boner, Wm. Bowen, U. F. Branshaw, R. E. Bray, Geo. Brecht, H. E. Breese,
Cecil Brooks.

Cecil Brooks.

Flora Brown, Geo. Burkinshaw, Melvin Burkland, M. F. Cabot, O. Campbell, Joe G. Cannon, A. G. Carlson, Ed Carlson, Robert E. Carroll, O. C. Conklin, Earl Cook, C. W. Consolver, M. J. Coruna, Chauncey Coston, E. G. Crandall, Esther Davidson, R. A. Davis, John Dawson, Lee Downs, J. F. Doyle, Lewis E. Drake, Ed Drowsby.

B. Drake, Ed Drowsby.

8 Robert Durney, Jr., Geo. Easter, Emil Ekman, Gordon Ellison, E. Erickson, Guat Erickson, C. A. Fogde, Dale Forbis, Louise Franko, Jeslie H. Funk, Vincent Gage, Leland Galloway, Don Gano, W. D. Gary, J. B. Gates, John Gavarecki, Mary Gibson, J. M. Girard, Mabel Greene, Jos. T. Greenleaf, Arthur Greeno, Andy Gudac, Jack Gudger, M. A. Gunderson.

Gunderson.

e N. Hageage, E. Hamilton, Helen Hansen, Herbert Hanson, Denzil D. Harper, J. A. Hawkins, Harold Hegg, Mildred Hepper, Irene Heron, Floyd Heron, Howard Hiley, C. S. Holderman, Ben Hepwood, Raymond Hoyt, Hazel Janisch, L. A., Johannes, Gunner Johnson, H. D. Johnson, Helge Johnson, Le Roy Johnson, O. G. Johnson, Roy Johnson, Stanley Johnson,

Ø J. Kashing, Wm. J. Kashing, Oliver Kelly, C. P. King, Joe Krache, Ted Kuprewicz, Ben La Bounty, W. A. Lacefield, Joe La Chance, Joe Lachiondo, Paul Lambrix, John Landstrom, Chad Lane, H. Lanphere, J. W. Large, Geo. I. Le Faive, A. Le May, Harry Lesman, H. Lillybridge, W. C. Lind, R. Lindell, Earl Link, M. A. Litven, Chas. T. Loomis, Harvey Lord, V. Lord, S. R. Louderback.

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Lord, S. R. Louderback,

J. D. MacNaughton, A. L. McCulloch, Don
McCulloch, C. A. McDougal, C. McKinstry,
Edward Major, R. C. Manley, John Mannioe,
W. Mattson, Dan Meddock, Wm. Meins, H.
Messenger, Harold Meissner, Geo. Mills, Thurman Moore, Leo Momat, L. W. Muma, R. W.
Munro, D. F. Murchison, Chas. E. Nelson, Ed
Nelson, Lester Nibarger, Arvo Niva, Joe Novak,
Lohn O'Lleyer, Old Oleon, Sud Otherok Nelson, Lester Nibarger, Arvo Niva, Joe Novak,

Ø John O'Leary, Olaf Olson, Syd Orkney, J.
G. Pearson, J. I. Philibrick, Wm. C. Phillips,
John Pill, Proctor Porter, C. R. Postle, Bail
Pratt, Joe A. Price, Howard Purdy, Vivian Quanrad, August Rank, Valian Reynolds, F. W.
Rowlands, Glen Roy, Ervin Saari, Geo. Salzer,
W. H. Sampson, Otto H. Sangder, Don Sawyer, J. G. Schley, C. Scott, E. L. Scott, G. L.
Severns, J. W. Shaw, James T. Sheehy, Geo.
Skelton. Severns, Skelton

Skelton.

Avid M. Smith, J. M. Smith, Ray Smith, W. Soderstrom, Dave Spielman, Helen Stein, W. Stewart, P. E. Stroup, M. Stubblefield, Clifford Swan, Dorothy Swanson, H. A. Swanson, John E. Thomas, Joe Thomas, Kenneth Thomas, Lester Thompson, H. Thomberry, H. D. Tinder, P. M. Toppari, W. F. Tracy, Adolph Tranick, W. S. Turk, N. Tweit, Peggy Tyler, Howard Van Auken, Wm. Van Trojen, Vernon Voort.

vogt.

8 E. Waldron, Roy Waldron, Clyde Wardlow,
F. A. Weiblen, Jim Weiblen, Jack Weiblen,
Roy Wheeler, C. M. Williams, W. C. Willia,
F. E. Wilson, S. T. Wilson, Phillip Winsor, L.
R. Wood, L. Wylsm, Ross Wynans, Nick Yakovich, Earl Yock, Glen Yoder, Harry Zent

Port Angeles Division

* Ten-Year Service Pins

A. J. Bennett, William Benson, Oliver Conrad, Ferman Derry, William Ditz, J. C. Fey, Frank P. Finher, Jr., Paul Fletcher, N. B. Gibbs, Otto Frame, J. G. Hardy, W. J. Lowndes, C. A. O'Grosky, Charles E. Rittenhouse, Peter Tveit, H. E. Weller.

* Five-Year Service Pins

Mar Ainsworth, Manuel Almaden, Ivan Alward, Arthur Anderson, Richard Anderson, Ernest Andrus, Axel Arvidson, Charles Atkinson, Clarence Baker, Clifford L. Baker, Lewis H. Baker, Marjorie Baker, William J. Baker, Domenick Basegio, Russel Bayton, Foster Beal, J. H. Beaver, Henry Becker, Edward Berry, Arthur N. Blair, John E. Bland, P. Blatter, Erven R. Braun.

Braun.

Paul M. Brown, William D. Brown, Melvin Burdick, Archie W. Burgess, Louis Burns, A. B. Bushre, Clarence Byrd, Cecil Cain, Paul Cameron, H. H. Campbell, P. Cannon, Frank N. Capps, Evert A. Carlson, Claude M. Case, Arthur A. Castellarin, H. Cathcart, Albert Christianson, Earl Conaway, Geo. A. Conaway, Warren Cooley, Howard Covington, Ray E. Crain, W. C. Crait, Edson Crawford, James P. Crocker, James Culley.

C. Charles Delton, E. Dangarfold, George Day.

James Culley.

Charles Dalton, F. Dangerfield, George Day,
Karl C. Day, Basil V. Decker, Francis C.
Denny, Joseph F. Desler, Fred H. Diamond,
Orin Diamond, Donovan Dole, Lee Dollarhide,
Julien Driessche, Frank Dunmire, Samuel Dustaman, Fred Eagen, Chester D. Earl, Jr., Chester
D. Earl, Sc., Lawrence R. Earl, Wilbur Earl,
Harvey Elliott, Kenneth Erickson, Roy Erickson, Harold Eshom, Wilbur Eshom.

son, Harold Eshom, Wilbur Eshom.

• William Faulkner, Alexander Ferrie, Henry
Fey, Oliver Finnerry, Sidney R. Fint, Earl Flora,
Eldo Florence, Ruth Francis, Alex Fraser, H. T.
Fretz, Chester Fuller, Felix Gallacci, Lamont C.
Galland, Edgar Gaul, Ervin Gilbertson, Ray
Gilbertson, Thomas C. Goin, red Gordon, Ray
Gormley, Floyd Gossard, Boyd R. Grant, Hans
Guldbrandesen, Roy W. Gustafson.

Guldbrandesen, Roy W. Gustafson.

• Edward Hagan, C. R. Harbison, Francis R. Harnden, John Heilman, H. Hendrickson, Walter Henry, Eugene D. Hervin, Lloyd Hettman, Moeris Flodgdon, John Holman, Lester Hudson, Owen Huffman, Harold Huggins, Calvin Hust, P. Hutchinson, Roy Hutchinson, Atary Irons, E. J. Jarvis, Evald Johnson, Harvey M. Johnson, Henry Johnson, Max Johnson, Meder Johnson, Stan Johnson, G. L. Johnston, Willis Justice.

Justice.

Richard H. Keeble, James Keir, George Keller, James B. Kennedy, John Kennedy, Charles A. King, Marion L. King, R. R. Kingsley, Lerokitselman, Charles K. Knapman, Conrad Kvals, Owen LaBelle, Arthur Lager, Kendell Lablans L. Larsen, Peter C. Larsen, Otto Laron, H. H. Lawson, Ernest C. Lenaley, Walter S. Libby, Julius Lindberg, Lloyd A. Lindberg, Jonas S. Linde, Arthur Lloyd, Merwin Lloyd, Arthur L. Lockbart, John Lopthien, Victor Lopthien.

(Concluded on page 42)

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National Paper Products Holds Anniversary Meeting

To commemorate the tenth anniversary of the starting of No. 2 machine, and to honor those members of the organization whose service records had reached five, ten, fifteen or twenty years, the National Paper Products Company division of Crown Zellerbach Corporation held a meeting at Port Townsend November 16, at which service pins were presented to 83 men and women of the company.

There were 68 men who had received their service pins five years ago, now reaching the ten year mark, or longer. Fourteen received their first service pins this day.

E. W. Erickson presided as toastmaster over the dinner, and in opening the meeting said:

• "Represented here tonight are sixty-eight members of our organization who have been on our payroll since No. 2 machine started oprations. Five years ago at a meeting similar to this one eighty-three members of our organization were represented as having been in the service for five years or longer. The

difference between these figures is fifteen, which represents the number who have left us since the last time we met. On the other hand we have included in the group this evening fourteen new members, who are now entitled to their five year service pins, so that while the meeeting five years ago had eighty-three members of our organization represented, the meeting this year has eighty-two members.

"It might be interesting to note how this group has fared during the time that they have been associated together. If all of the present group had been on our payroll the year 1929, they would have been capable of earning, at the rate paid at that time, \$118,326.00.

"From 1929 to 1934 we went through a rather discouraging time, during which time operations were at a very low ebb—in fact so low that it was necessary to decrease wages. However, in spite of all of this the group represented here this evening were capable of earning \$127,800.00 during the year 1934.

"Estimating the earnings for November and December of 1939, this particular group will earn approximately \$162,330.00 for this year. While we do not like to use dollars in this comparison, it seems the only one possible and I am sure that everyone will agree that if this is a measure of effort and success that those individuals represented in this group certainly are to be complimented on the efforts that they have put forth for the success of this operation.

"I am not going to bore you with many more statistics; on the other hand you will be interested to know that at the present time 340 members of our organization have service pins, as follows: 4 have 25-year pins, 4 have 20-year pins, 13 have 15-year pins, 189 have 10-year pins, 130 have 5-year pins.

"In 1929 when most of this group started their work here we had 332 men and women on our payroll. Today we have 476 men and women on our payroll." (See next page)



AT PORT TOWNSEND . . . Present at the National Paper Products Co. service pin award dinner were, left to right, N. M. Brisbois, vice president of Fibreboard Products, Inc.; E. W. Erickson, resident manager, National Paper Products Co.; H. N. Simpson, resident engineer; N. A. Lewthwaite, pulp mill superintendent; H. E. Burdon, office manager; L. S. McCurdy, paper mill superintendent; J. D. Zellerbach, president of the Crown Zellerbach Corporation; F. L. Ziel, assistant resident manager, National Paper Products Co.; W. D. Daly, city attorney, representing H. L. Hertzler, mayor of Port Townsend.

• He then introduced J. D. Zellerbach, president of the Crown Zellerbach Corporation, who traced the history of the company from the time the mill at Camas was first started, while Washington was still a territory. As the company grew, he said, greater dependence on the staff, greater delegation of authority had to be practiced. The result has been the building up of a valuable staff of employees, the presentation of service pins being a recognition and appreciation of this value. Mr. Zellerbach personally presented the pins to each recipient.

Those receiving service awards were:

Five-Year Pins

. E. C. Sherman, Louis Albrecht, I. T. Larsen, A. M. Toner, Elliott Irvine, Carl Aronson, Ralph Gailey, K. Lehman, Ed Toohey, John Siebenbaum, C. L. Foster, John Hamey, F. Southmayd, W. F. Win-

Ten-Year Pins

● Leonard Balch, Ray Brooling, P. T. Danzer, V. E. Edney, Clyde Hackney, H. P. Hirschel, Ernest Kunz, Karl Kuehn, Pete Meister, Allen McMannis, C. H.

Purdy, P. W. Sullivan, L. E. Van Meter, Harry Woolever, Harry S. Cotter, Hal Taylor.

• P. C. Bishop, W. B. Camfield, Howard Davies, Gale Eikenberry, E. J. Haight, T. N. Monahan, Emil Kaiser, Harvey Larson, W. C. Meyers, Olaf Olson, Jim Silva, P. S. Tobin, Guy Whiteman, Ray Worley, C. R. Erickson, Ed Buse.

• F. Brenner, Roy Cromwell, Davis, Ole Engvolsen, Charles Hanby, F. Horton, Howard Knutzen, Irvin Lehman, Homer Moss, George Parmeter, F. T. Simcoe, William Trager, Ed Will, Murray Young, May Lucas.

August Brooling, Arnold Cruickshank,
 E. J. Dupuis, B. A. Erickson, Harley Harper, S. C. Huffman, Henry Krieger,
 Willard Lindley, E. J. McDougall, G. C. Purcell, F. Stromberg, T. R. Twiggs, A. H. Wilson, McDaniel Winchester, Esther

Fifteen Year Pins

• William Cotterell, who first became connected with the Fibreboard Products Inc. during 1924 and remained with that company until June, 1928, at which time he was transferred to Port Townsend.

he was transferred to Port Townsend.

Charles W. Hoaglin, who entered the
employment of the Crown Willamette
Paper Company at Camas during April,
1924, and in July, 1928, was transferred
to the Port Townsend plant.

Walter Robinson, whose employment

dates back to August, 1924, with Pacific Mills, Ltd., plant at Ocean Falls. During March, 1929, he was transferred to the Port Townsend plant.

Gilbert B. Thomas, whose employment dates back to 1924 with Pacific Mills Limited, Ocean Falls, B. C., where he re-mained until April, 1928, at which time he was transferred to the Port Townsend operations.

Twenty-Year Pins

· Claude Maulding, who during Janu. ary, 1920, entered the employment of Pa-cific Mills Limited, Ocean Falls, B. C., where he remained until December, 1928. During January, 1929, he transferred from Ocean Falls to Port Townsend.

Harold Quigley, who first entered the employment of Fibreboard at Stockton during April, 1919, where he remained until 1928, at which time he was trans-

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ferred to the Port Townsend operations. Einar W. Erickson, whose service with the organization dates back to November, 1919, at which time he entered the em-ployment of Pacific Mills Limited, Ocean Falls, where he remained until February, 1926. At this time he was transferred to Camas, and remained at that organiza-tion until January, 1927. During March, 1927, he was transferred to the Washington Pulp & Paper Corp., at Port Angeles, and was later transferred to the Port Townsend plant during September,

Fibreboard at Port Angeles Awards Pins

The Pivot Men's Club of Fibreboard Products Inc. held its regular monthly meeting at the Port Angeles Golf Club on November 14, at which time service pins were presented to employees who had "come of age".

Robert E. Bundy, permanent chairman of the group, presided at the meeting. Also present was N. M. Brisbois, vice president in charge of operations, who made the service awards. Service pins are presented to employees at these meetings every second or third month.

It is of interest to note, and a point of pride with the Fibreboard organization, that more than 70 per cent of the entire personnel of the Port Angeles organization has re-

ceived these awards.

Fifteen year pins were received by Sigfred Dahl and William F. Scrivner. Ten year pins were presented to Otto Lilly and Gene Martin. Five year pins were awarded to Otto Eriksson, Frank G. Page, Jr., Earl W. McElravy and Louis J. Howser.



FIBREBOARD . . . Left to right we see Robert Bundy, resident manager of the Port Angeles mill of Fibreboard Products, Inc.; N. M. Brisbois, vice president in charge of production for Fiberboard; A. R. Heron, director of industrial relations for the Crown Zellerbach Corporation.

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Paper Machine Wires

by HARRY G. SPECHT*

S we have carried on our studies of the Fourdrinier machine in relation to making paper, we have found it necessary to analyse our problems under four classifications. Each classification is affected by different factors, although there are many factors that affect all four classifications. A given factor in a wire might help wire life and militate against printability in the paper, and so a factor that favors drainage might militate against sheet formation.

We have set up four classifications for our studies of the fourdrinier wire:

- 1-Factors that affect wire life.
- 2-Factors that affect sheet for-
- 3-Factors that influence drainage of the wire and the stock.
- 4—Factors that influence printability, ink absorption and "show through."

A sheet of paper might indicate good formation and show up poorly in the press room, from the printing stand point. Some of these truths are not accepted as they should be when analysing our problems. As an illustration, we must think in terms of speed of machine when talking wire life. When thinking in terms of cost of wire per ton of paper, we must consider weights of paper and kind of paper made on a given wire. A wire reported as giving a 20 days life at 600 feet per minute, has not given as good a life as a wire that ran 12 days at 1200 feet per minute. The first wire ran 12,000 feet days, the second wire 14,400 feet days.

Need Basis for Comparison

The greatest need of the paper industry today, from the standpoint of operation, is the establishment of fundamental yardsticks as a basis for comparison of one sheet of paper as against another, and for comparing one wire against another. We need yardsticks of camparison.

The interesting thing to me as I travel among the mills, is the lack of yardsticks that are accepted as tying in with use of the products. A superintendent making the paper, tries to judge paper finish with his eyes, and by looking at it through a glass of two magnification. They are his only tools in most cases, while the printer judges it by his press. Surely these two yardsticks are not only far apart and different, they are not even of the same blood relationship.

Can't we, as technical men, develop simple yardsticks that both the printer and superintendent can use when judging printability, or that the converter can use as it affects his problem?

To do this, there must be a coordination of sales effort, with operation and technical control, and all three—sales—technical, and operation must use the same yardstick for comparison. This is a large order by itself, but I believe it is most important.

The work of the committees, working on paper finishing and forming, should make this a major problem for solution by the technical end of the paper industry, and I am sure, it will be of great aid to the operating end of the industry. We badly need simple yardsticks of comparison.

In carrying on our work, we have endeavored to reduce our conclusions to the vernacular of the operating man. We must all talk his language and we cannot expect him to talk ours. His job is operation, and he talks the language of labor, production, machines and costs. He

must maintain speed, quality and low cost. In many mills, we are reaching the point at which the law of diminishing returns is now effective. Let us, therefore, make changes slowly and in accordance with the profit and loss statement. Factors that cut costs are important, but they must be weighed against quality, when improvements of quality will increase sales. Quite often, improved quality does not increase sales or improve the companies sales position.

This introduction to one problem is a most important one. As technical men, we must coordinate manufacturing and sales, and when we fail to do this, we fail in our responsibilities. Our job is not fundamentally to develop or control the product, it is to deal with our product in terms of the sales dollar. I am talking to you, not as a wire manufacturer, but as a fellow worker serving on one of your technical committees.

It will be impossible to go into much detail on any one of the four classifications we have outlined, as time does not permit. So if it meets with your approval, we will hit some of the high spots in each classification and outline some of the results of our studies, and permit a further exposition of the subject to the question period or to a later program.

Speed a Vital Factor

• The one factor that affects all phases of operation of the paper machine is speed. We have become accustomed of thinking of speed in terms of product costs, but far too little time has been given to speed

Table I

	60 Fo	oot Wire	80 Fo	ot Wire	100 Foot Wire		
	Distance	Distance	Distance	Distance	Distance	Distance	
	Breast	Breast	Breast	Breast	Breast	Breast	
Mach. Speed	Roll to	Roll to	Roll to	Roll to	Rollto	Roll to 1st	
In Ft. Per	Couch	1st Suction	Couch	1st Suction	Couch	Suction	
Min.	Roll	Box	Roll	Roll	Roll	Box	
	27 Ft.	20 Ft.	37 Ft.	30 Ft.	47 Ft.	40 Ft.	
	Time in	n Seconds	Time in	n Seconds	Time i	n Seconds	
200	8.1	6.00	11.1	9.0	14.1	12.0	
600	2.7	2.00	3.7	3.0	4.7	4.0	
1000	1.6	1.20	2.2	1.8	2.80	2.4	
1200	1.3	1.00	1.8	1.5	2.35	2.0	

Machine Speed and Wire Length as Factors In Paper Making

^eVice-President and General Manager of the Eastwood-Nealley Corporation, Belleville, N. J., manufacturers of paper machine wires. Presented at the Dinner Meeting sponsored by the Pacific Section of TAPPI and held at the Crown Willamette Inn, Camas, Washington, November 7, 1939.

in terms of wire life, sheet formation, drainage, and even printability. Let us look at Table 1 indicating the relationship between machine speed and the time element involved for forming a sheet of paper and of draining it over the boxes and the couch roll.

The distance on a machine of 7 feet from the couch to the first suction box is taken as about average. It varies on all machines. The distance from the slice to the first suction box is taken as 20 feet on a 60 foot wire, as 30 feet on an 80 foot wire and as 40 feet on a 100 foot wire.

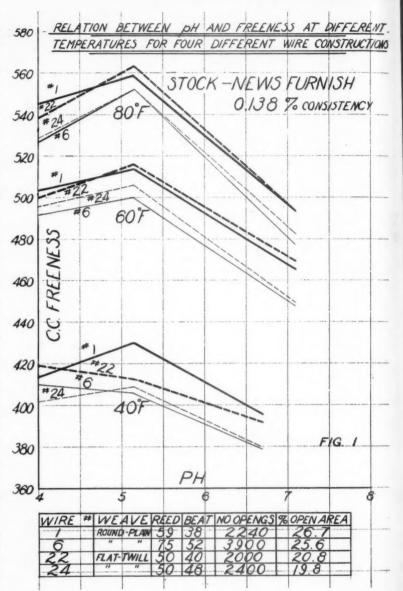
The superintendent operating a 100 foot wire has twice as much time to form his sheet as one operating a 60 foot wire, at any given speed, or 33 per cent more time than one operating 80 foot wire.

And so on any given length of wire, a superintendent operating a machine at 1200 feet per minute has one half as much time to form a sheet as one operating at 600 feet per minute.

Let us deal with the 80 foot wire for a moment. At 600 feet per minute, there is one third the time available per sheet formation as at 200 feet, and at 1200 feet per minute there is only 16 per cent of the time available. At 1200 feet per minute only 1.5 seconds of time is available. As we increase speed of machine the available time for sheet formation varies in an inverse ratio to speed increase and we approach the point of diminishing return. To offset the point of diminishing return other factors must be made effective for results. These factors might involve temperature to increase drainage of stock, or vacuum to remove water at boxes and couch. Increased vacuum decreases wire life, and increased temperature stimulates electrolysis, again cutting wire life.

Every mill should study their machines in regard to speed and length of wire, and chart their available time and endeavor to establish the point of diminishing return, to make each grade of paper. A machine operating at 600 feet per minute on book paper might run at 800 feet on tissue. At 800 feet a 15-pound tissue might be feasible while a 10-pound sheet might not form properly at the same speed, whereas it will form at 750 feet. The time to drain the water necessary for the formation of the sheet is the controlling factor.

When the point of diminishing return is reached, lengthening of the wire will permit of again increasing speed, assuming the drying



and press capacity are available to accommodate the increase. Most mills are operating under conditions where the diminishing return point can only be changed by other factors or changes.

Operating a machine beyond the speed point of diminishing return, will invariably cause trouble in one form or another. This might be reflected in increased machine breakage, or higher felt and wire costs or poorer quality in formation and finish, or lower production.

That machine operates most successfully when the production curve is near a straight line when the daily production figures are plotted in the form of a curve. Daily fluctuation in production, is indicative

of some points of operation being beyond the loosing point. An analysis of such points of operation will help to change the weak points to strengthen the whole. No machine has ever been built that was a balanced unit, whereas many a machine has been changed at points of operation to form a finished balanced unit. The head box, wire, presses, dryers and stack and winders must all be balanced. A dryet that causes breaks will greatly affect felt and wire life.

Most factors that cause wire wear, are machine factors. In clay filled sheets, the stock is as important in wire wear as the machine. A given mesh wire operating at a given speed, will have twice the life on a kraft stock as on a clay filled "book

Table II Wear of Fourdrinier Wire

	Warp	Half	- Amoun		Per Day -
	Wire	Warp	10 Day	20 Day	30 Day
Mesh.	Dia.	Dia.	Run	Run	Run
60	.0092	.0046	.00046	.00023	.00015
70	.0076	.0038	.00038	.00019	.00013
80	.0066	.0033	.00033	.00017	.00011

sheet." Variations in stock furnish affect wire life in accordance with the abrasiveness or lubricating qualities of the stock.

Table 2 indicates the wear on a fourdrinier wire in terms of days life. Three meshes are listed. If a 60 mesh wire is used, the warp diameter of the wire used in weaving the wire will be close to .0092. When a warp wire is half worn through, the wearing life of the wire is indicated. Therefore, the approximate life in a wire is indicated by half the warp diameter of .0046 inches, or twice the diameter of a hair.

If a wire runs for 10 days, the wear per day is .00046. If the life is to be increased to 20 days, then the wear per day must be cut to .00023. Now these are small dimensions, and so minor factors will greatly affect life and wear.

We cannot deal with all the factors on the machine that affect wire life, but the suction boxes and the stock are the two major factors. All other points of contact greatly affect the wear factor. Small changes on the machine help materially.

Factors Affecting Sheet Formation

• The next classification is that of factors that affect sheet formation. The speed at which the stock is brought out on the wire is the first controllable factor. The stock must be brought out on the wire, at such speed that it will settle and travel with the wire as soon as possible often leaving the slice. Carrying the stock too far down on the wire is detrimental to good sheet formation.

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aof ile, The second factor is draining the carrying water of suspension too rapidly causing segregation of stock fibers and making for a mottled sheet. This is more important in coarser meshes than in finer. Draining too rapidly in fine meshes causes clogging of the mesh openings, before sheet formation has taken place.

A third factor is type of wire used. A twill weave wire gives a different sheet formation than a plain weave. Do not confuse wire marking and sheet formation. Due to the fact that fibers mat differently

on a twill weave wire than on a plain weave the resultant sheet will show slightly higher tensile strength, and show greater resiliency. This is not as apparent in short fiber stock as in long fiber stock. Long fibered stocks form a softer sheet on twill weave than plain weave. This is due to the cross or weft wires of a twill weave wire, deflecting the stock fibers as they first hit the wire and lying more crosswise of the wire than lengthwise of the wire. A study of the cross section of a wire will make this fact more apparent.

There are a number of additional factors that affect formation from a wire standpoint, but time does not permit discussing them. We are not dealing with many factors that affect sheet formation, as they are not directly related to the wire, such as slice, head of water in head box, forming boards, stock consistency, fiber length and many other factors too numerous to mention here.

Factors Influencing Drainage

• The third classification concerns factors that influence drainage. I refer you to our work outlined in our paper presented before the Technical Association meeting held in New York in February of 1938. In this report, we ran tests on 27 different wire mesh constructions, with 5 different types of furnish.

Our conclusions were: that the rate of drainage is greatly affected by temperature. In general, the drainage of the stock follows closely the viscosity curve of plain water.

With increases of temperature and pH, the freeness decreases at a more rapid rate after a maximum increase has been reached.

There is a critical or maximum pH point for freeness for each type of furnish.

Wires can be correlated in regard to freeness of stock.

The rate of drainage of the stock varies with the wire mesh. Therefore in measuring stock freeness from the machine standpoint, the same mesh of wire should be used in the freeness tester as is used on the machine in making the paper. Then the laboratory and the machine are using the same yardstick. Otherwise stocks that test free in the laboratory might prove to be slow on the machine and visa versa.

We conducted many experiments testing freeness of stock as affected by pH, temperature, alum, acid and other factors, but they are not directly related to the wire.

The diameter of the table rolls and their spacing affect drainage of the wire, and as the stock and wire drainage are affected, so the sheet formation is affected accordingly.

Formation of fibers, printability of surface and ink absorption and "look through" are all affected by drainage and a cross relationship develops between them all in a resultant sheet made under given machine and wire conditions. Change the machine speed and the wire, and a change results in the paper, due to the effect these changes have in the drainage of the stock and wire.

Factors Influencing Printability

• Now we are at the fourth classification of factors that influence printability, ink absorption and "show through."

We have been working with two mills on this phase of our work. We have discovered some really new factors that are controllable in wire construction that greatly affect these sheet qualities. However, we are not prepared to report on them as

So far our tests have indicated, that papers made on twill weave wires are more resilient than papers made on plain weave—Second, that papers made on twill weave wires, show better printability and greater ink absorption than paper made on plain weave wires. That the improved printability is due to the greater absorption of the ink, caused by fiber formation and that some of the improved printability is due to the sheet resiliency. That in light weight sheets, due to the greater absorption of the ink there is an increase of the ink "show through," and the gain made in printability is offset by "show through."

We have no definite information on ink absorption of long fibers or short fibers, of ground wood, sulfate and sulphite stocks in comparison one with another. Since these factors are not related to wire construction, we cannot discuss them

We believe we have opened up some interesting avenues for discussion and further research work. As wire manufarturers, we have gone as far as we can, with our limited knowledge of paper making, and we believe, The Technical Association should carry on and prove to their satisfaction, the affect these factors have on their daily operations.

Fry Roofing Company Completes New Portland Plant

Lloyd A. Fry Roofing Company builds second plant on the Pacific Coast — Now has seven plants strategically located throughout the country.

S another step in their nation-wide coverage of roofing markets, the Lloyd A. Fry Roofing Company recently constructed and put into production their seventh plant, at Portland, Oregon, the second on the Pacific Coast. It is the very latest in roofing mills, embodying the most modern features.

The paper felt used by the mill is a Pacific Coast product, being shipped here from the company's felt mill at Compton, Calif. Other raw materials, aside from saturating agents, chiefly include slate granules, which are also a domestic product, coming from Poultney, Vermont. Asphalt is furnished by the Trumbull Asphalt Company, which furnishes asphalt and saturating agents for all of the company's plants. They maintain their own the company.

The factory itself is a large unit, being 150 feet wide and 550 feet long. It contains all of the modern facilities, not only for manufacture and storage, but also for ventilation and proper working conditions for the employees. The roofing machine alone is 250 feet long.

The new Portland factory is electrically controlled throughout, the latest word in machine control being exemplified by the bottom control system employed on the roofing machine.

There is storage room for about 1,000 tons of dry felt to be held in reserve for the machine.

Complete Line Made

The company's line includes smooth roll roofing, Vermont slate surfaced roofing, Vermont slate surfaced shingles in various designs, plastic cements, roof coatings and asbestos side wall shingles. Approximately 80 cars of stock are carried in the warehouse at all times. Facilities are available for loading 40 cars of roofing at one time both by rail and by truck.

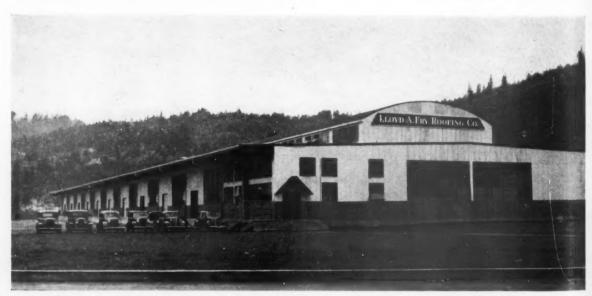
When the stock of raw and finished material is included, the investment in the new Portland factory amounts to about \$350,000. It represents a large payroll, there being some 40 employees in the

plant and office, all of which, with the exception of three or four department heads, are local residents.

While the company does not now make felt at the Portland branch, property has been provided for such expansion should it prove advisable in the future. If and when the market justifies, it is possible that a felt mill may be part of the Portland operation.

The sales territory of the new Northwest factory will include Washington, Oregon, Idaho, Montana and Alaska. But in this territory the company has no salesmen. All products are sold through distributors. Production is under private brands, or under the company's own brand "Invincible."

Mr. Lloyd A. Fry organized the Lloyd A. Fry Roofing Company in 1933, and since that time has built up the company into a chain of plants covering almost the entire country. There are felt mills at Compton, California, Mishawaka, Indiana, Miamisburg, Ohio, and Fulton, New York. Roofing plants



The LLOYD A. FRY ROOFING COMPANY'S new Portland, Oregon, roofing manufacturing plant.

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LLOYD A. FRY, President Lloyd A. Fry Roofing Company

are located at Compton, California, Memphis, Tennessee, Chicago, Illinois, Detroit, Michigan, Kearny, New Jersey, and Waltham, Massachusetts.

Company Personnel

Mr. Fry is president of the concern and makes his headquarters in Chicago. Mr. William Henry is Pacific Coast manager, with his offices in Los Angeles. Mr. Fred S. Wilber is Northwest plant manager at Portland, with Mr. Eli Mason as factory superintendent. Mr. Harry Graham is manager of the plant at Compton, California. Mr. Fry has been in the roofing business for the past 20 years or more, and was formerly vice - president of the Richardson Company of Lockland, Ohio.

Mr. Henry has been connected with the Coast roofing business nearly 25 years, and was general manager of the Pioneer Paper Co. in Los Angeles. He resigned that position and formed the Weaver Henry Company at Los Angeles, being vice-president until he sold to Johns Manville Corporation. He retired, but being of an active nature, he came back into the game as manager for Fry at Compton.

Mr. Wilber came to the company from Los Angeles, where he was in charge of the roofing department for the R. J. M. Co., wholesale hardware distributors. He has been in the roofing business since he was 17 years old, and is an old hand at the game.

Mr. Mason has been with the company since its inception, coming to Portland from the company's plant at Chicago.

Christensen Predicts Bright Future for Northwest Industry

Export of pulp logs from British Columbia was deplored by Andreas Christensen, technical advisor to B. C. Pulp & Paper Company, Vancouver, when he addressed a meeting of the engineering bureau of the Vancouver Board of Trade recently.

Mr. Christensen said that before the war shipments of logs were being made to Japan and other countries at a time when Canadian pulp mills were idle because of frozen markets, and he pointed out that eastern provinces had been shipping peeler logs to Germany that later were returned to the United States in finished products that might just as easily, and to far greater advantage, have been supplied direct from Canada, as the United States was Canada's logical market.

He said that during the past few years Japan had built nine pulp mills to depend almost entirely on pulpwood logs brought in from other countries. Sweden had been supplying the bulk of the material for some of these mills, but at least three had been established solely for pulpwood from the Pacific Northwest.

Germany had come to this market, said Mr. Christensen, because supplies had been cut off from Russia which had exploited her timber resources earlier to establish foreign credit. Development of Soviet gold mines had made this no longer so necessary; Russia was using her own wood now and Germany and other pulp milling countries had been forced to look elsewhere for their raw material.

But it was, generally speaking, a hopeful picture that Mr. Christensen painted of the future of the pulp and paper industries in the Pacific Northwest. In British Columbia, for instance, it had been estimated that 50 per cent of the timber was suitable for saw logs and 50 per cent for pulpwood. Last year of a total cut of 2½ billion feet, only 15 per cent had been of pulp species, indicating that the province's reserve of pulp timber was being effectively conserved and its ratio to saw logs steadily increasing.

"This situation can be interpreted in only one way," said Mr. Christensen, "that the future will see far more expansion in pulp and paper than in saw-mill operations."

Mr. Christensen told of the need for further conservation in British Columbia's forests and referred to a recent statement by the Chief Forester, E. C. Manning, that the province's timber was being over-cut, that logging operations at their present rate represented the liquidation of assets and the conversion of capital into revenue. By contrast he recalled that Sweden had forests that had been on a sustained yield basis for centuries. Norway, on the other hand, had stripped its coastal forests long ago and today had barren hillsides where the timber had been.

The first mill in British Columbia to produce unbleached pulp—one at Swanson Bay since dismantled—should be regarded as the typical mill setup for the future, for it combined production of shingles and lumber as well as pulp, said Mr. Christensen, who regards the Weyerhaeuser and Long-Bell plants at Longview as the present ideal for the Pacific Northwest, because they are equipped to eliminate waste and utilize all by-products of their lumber cut. One mill was equipped with four chemical processes, he said.

Since 1913, when British Columbia led the Northwest in pulp output, the increase in the province's production had been only 40 per cent, while in the adjacent states the increase had been 400 per cent. He regarded this as not only an indication of more aggressive development in the States due in part to more favorable markets but also as a sign of the potential production awaiting B. C.

"Washington and British Columbia alone could supply one-third of the world's demand for dissolving pulp," said Mr. Christensen. "Our pulpwood is the finest in the world and the supply in other countries is rapidly being exhausted. Preoccupation of Europe with war, coupled with disruption of shipping services, has presented this part of the world with a tremendous opportunity. Norway has cut its pulpwood supplies to the limit: Sweden is cutting 75 per cent of its available timber; Finland is near capacity, and Russia may as well be forgotten as a serious competition for years to come, because she will need her own lumber as fast as she can produce it.

In 1920, recalled Mr. Christensen, only 4,000 tons of dissolving pulp, used for such products as cellophane, rayon and lacquers, was used in a year. Last year the consumption was more than 1,000,000 tons. There was every reason to expect steady increase in consumption of Northwest pulp in the future.

J. D. Zellerbach in East

J. D. Zellerbach, president of the Crown Zellerbach Corp., accompanied by Mrs. Zellerbach and their son, J. D. Zellerbach, Jr., and his wife, left San Francisco Dec. 2 for New York, to be gone until after Jan. 1.

Kindelstyx Now Made at St. Helens

● The Fir Tex Insulating Board Co. is now manufacturing at the St. Helens plant the fire lighting product known as "Kindelstyx," which is composed of strips of Firtex which are impregnated with a wax preparation. They are now being marketed in a new package, and the sticks themselves are scored so that only one-third of the sticks need be used to kindle a fire.

This product is now being distributed nationally by the Phillips Products Co. of Portland.

Some Practical Observations On Flat Screen Operation

by ERIK EKHOLM*

ELIMINATION of dirt is one of the most troublesome variables confronting the pulp mill operator. The battle begins in the wood room. The bark is peeled off the logs. Knots are cut out of the cants. The chips are screened, then cooked in acid made of filtered water. Stock is pumped through wood or rubber lined pipes to tile lined chests. Knots are removed, grits and heavy particles settle out in the rifflers, and finally the stock is served. the stock is screened.

Because flat screens are usually the last step in the process of dirt elimination, they are of especial interest. It is not meant to unduly emphasize the impormeant to unduly emphasize the impor-tance of flat screens, their function is to eliminate dirt on a basis of particle size and this is all they will do. The more dirt supplied the screens, the dirtier the accepted stock, but since they are the last and perhaps the cheapest means for removing dirt, they deserve our careful at-

• The problem is not one of simply choosing a set-up which will deliver the cleanest stock. The cleanliness must be balanced against the cost of producing it. An optimum tolerable fiber size is decided upon and the screens layed out to suit this predetermined standard. Sup-pose a mill is built with the screen room arranged for a particular set of condi-It operates well and sells its pulp. But as time passes quality standards go higher and higher, yesterday's satisfactory operation no longer meets the conditions of today, and sooner or later the mill again inspects its screening system.

Flat screens are flexible. Their operation is governed by many variables. When the mill is faced with the possibility of making changes, it finds many ways to do it. The speed can be changed, the length of the stroke, the consistency of the stock. But there is always the question of "What effect will this have on quality?" In general, we know that increasing the capacity of a screen inreases the number of oversized particles pulled through. Decreasing it will have the opposite effect. "How much?" the operator wants to know, so he turns to his handbooks and he searches the literature, but finds little specific data. He then experiments on a small or large scale and observes the results for himself. The data is filed among the mill records for future reference. The next fellow comes along and repeats the operation. It is for this next fellow that this paper is written; to begin a literature of data show-ing the relative influence of some of the

variables affecting flat screen operation. *General superintendent of Puget Sound Pulp & Timber Co., Bellingham division, Bellingham, Wash. Presented at the fall meeting of the Pacific Coast division of the American Pulp & Paper Mill Superintendents Association, Inc., held at Portland, Ore., Dec. 1-2, 1939.

Variables Affecting Flat Screen Operation

- A flat screen is a piece of machinery simple in principle but complex in the number of variables affecting its opera-The following list enumerates some
 - I. Composition of stock above the screen
 - Consistency B. Per cent tailings C. Type of fibers
 - II.
 - Screen plate Width, length, and arrangement of slots
 - B. Flexibility of plate C. Sharpness of edges D. Cleanliness of slots

 - Force pulling stock through plates
 - Length of diaphram stroke Number of strokes per minute.
- Head on screen which affect the screens with regard to:
 1. Capacity
- Cleanliness of output
- Power consumption
- Maintenance charges Loss of stock as tailings

To evaluate those variables of principal importance, screen plates of differ-ent slot size were set side by side in the primary line of screens and tested simultaneously under various conditions of lead and force. The results of these tests will be discussed in the order listed above.

Effect on Screening Capacity

• To test each of the listed variables independently against each of the others would be a Herculean task, so the test-ing was limited first to only four vari-The variables chosen were length of stroke, number of strokes per minute, size of screen plate slots, and consistency of the stock. Each was varied, holding the other three constant while the capacity was measured according to the procedure described below.

The first step was choosing the location the test section. Table I lists the details concerning the location so at this point it will merely be added that this spot was chosen because the stock delivered to it would provide the most uni-form conditions for making the test. Preliminary to testing, the sections were carefully cleaned and checked for level and slope, the screen plate slots cali-phered under the microscope, the stroke length checked for each diaphram and finally each diaphram checked against the others by operating the screens with plates of the same slot size in each sec-

Cleats were nailed below the outlet dam so that the spill-over could be caught in a bucket. A bucket of known volume was then swung under the trough and the time to fill it measured with a stop watch.

This was immediately followed by consistency tests of the stock from above the plates and from that accepted thru the plates. This consistency-time-volume data furnished the basis for calculations, the results of which are plotted in figures 1, 2 and 3.

0.006 sLOT

2,007 sLOT

During this first series of tests the outdam was maintained at a level 4.7 below the face of the screen plate, the screens were hosed clean immediately before each test, and every precaution taken to maintain uniform conditions.

 In Figure 1 are plotted the results of this first series of tests, expressed as tons of air-dry fibers per 24 hours per screen plate. It is unfortunate that the graphs are so small, but in order to show the effect of all the variables without making the size of the report too cumbersome, this size proved most suitable. However, the accuracy with which these figures can be read is consistent with the use to which they can be put.

Each of the three vertical rows of the figure represents a different setting of the diaphram stroke as marked at the top of the row. Each of the four horizontal rows represents the results of tests on screen plates of the four different slot sizes as marked on the left-hand side of the figure.

The ordinates of each graph are graduated into tons capacity per 24 hours, and the abscissa is graduated into percentage bone-dry consistency of the stock supplied the screens. Every graph has three curves, each representing the screens speed marked on the curve.

It is interesting to note the number of different combinations which will deliver a given capacity. A selection is offered the operator and he renders his decision on a basis of cost, ease of making the change, etc. The curves show that when the stock is too thin, the screen must handle so large a volume that the capacity decreases. At the other extreme, when the stock is too heavy the fibers mat over the slots and the capacity is diminished. The finer the slots, the lower the consistency at which this happens. Between these two extremes lies the point of most efficient operation.

The reproducability of the data for any given set of conditions is surprisingly good, even on different stocks and over a considerable interval of time. Naturally all of the data did not fall in a straight line. It was necessary to draw smooth lines thru the majority of points, not including those off the regular track, but considering that the data was gathered over a period of time, on different types

of stock, the data correlates very well.
Ordinarily the bleachability of the stock did not influence the results as

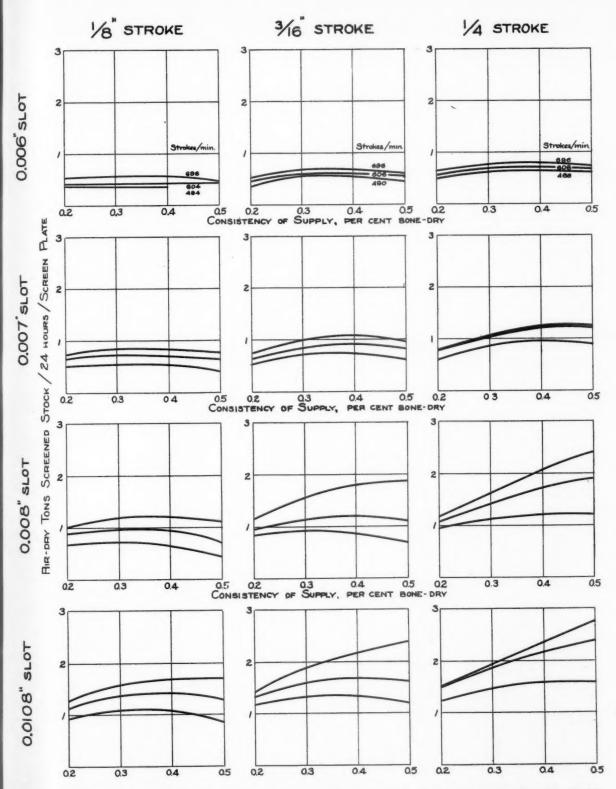


Fig. 1. Relation of Screening Capacity (Air-dry tons/24 hours/screen plate) to Length of Stroke, Width of Slots, Number of Strokes per Minute, and Consistency.

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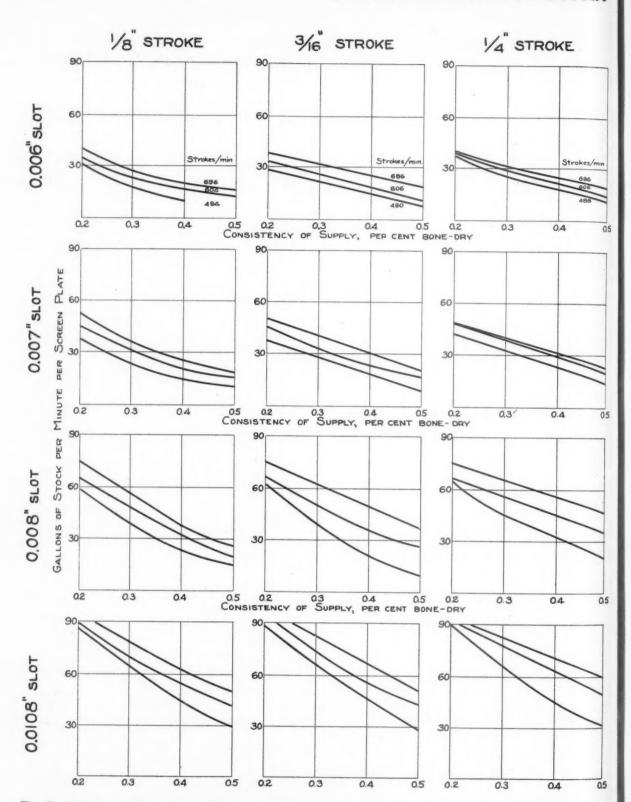


Fig. 2. Relation of Capacity in gallons of stock/minute/screen plate to Length of Stroke, Width of Slots, Number of Strokes per minute, and Consistency.

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much as any one step of any single variable covered in this series of tests. This is due in part to the test procedure of hosing the screen slots clean immediately before testing, this eliminating the factor of plugging, which is the detrimental effect of harder stocks. The flexibility of the drive shaft effected the results. At \(\frac{4}{4}\)" stroke and the highest speed, the capacity of the 0.008" plate which is nearest to the drive, was proportionately much higher than that from plates located farther away.

Figure 2

 Figure 2 is identical to figure 1 except that it expresses the capacity as volume of stock accepted by each screen plate per minute. It serves the purpose of showing the gallonage to be handled by pumps, deckers, etc.

At first thought it may seem that figure 2 is superfluous, that the gallonage could be calculated by dividing the capacity of figure 1 by the indicated bone-dry consistency. Recollections that the consistency of the screened stock does not coincide with the consistency of supply eliminates this idea.

Figure 3 pictures the usual relationship between the consistency of the stock above the plate and the consistency of the accepted stock. It must be emphasized that the figure is merely an illustration, that the curves for any particular set of conditions may be either to the left or to the right of those shown. They may even exchange positions.

The reason for the difference between consistency above and below the plate may be in part due to the settling of the fibers, but it would seem that if this were the reason, all of the plates would be affected alike. It is apparently more a function of slot size which tends to pull fibers out of the flow. The difference is most pronounced at high consistencies and particularly noticeable in tests where the overflow dam is raised to a high level.

Figure 4

• Figue 4 introduces the fifth variable to be evaluated, the effect of changing the position of the outlet dam. At the test section the surface of the stock is 3.3" above the plate. The outlet dam at its lowest position is 4.7" below the surface of the plate. The total head across the screen is 8" water. If the outlet dam is raised, the head, the force pulling the stock thru the screens, is decreased and the capacity of the screen drops. The test results plotted in figure 4 illustrate

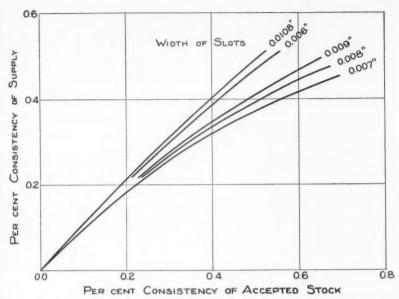


Fig. 3. Illustration of Relationship between Accepted Stock Consistency and Consistency of Supply.

this drop in capacity. The bascissa is graduated to express the height of the outlet dam above its lowest position. These figures can be converted to inches head by subtracting from 8". The test of only one size plate is shown. The trend is the same for all plates. However, in the narrow cuts, especially while screening stock containing a high percentage of tailings, the slots are apt to plug so that the net result may be a decrease in capacity.

The five variables tested are not the only ones affecting the capacity, but are the ones of the most general interest and the ones most easily evaluated into figures. The type of stock influences the capacity. The per cent of tailings in the stock changes the capacity. The cleanliness of slots is another factor. But these latter variables are of a more local nature, and will not be treated on in this paper.

Effect on Cleanliness of Accepted Stock

• Generally, as the capacity (volumetric) increases, the dirt count increases; as the capacity decreases, the dirt count de-

creases. Increased capacity brings an increase in the force pulling the fibers through the slots. The higher the force, the greater the velocity through the slots, the more over-sized particles will be carried through. Capacity results weren't reported to emphasize them. They were reported first to provide a basis for judging the results of the cleanliness tests. Making dirt counts is slow, tedious business. Evaluating all the variables on the basis of actual counts is impractical, so every effort was bent towards tying cleanliness results up to capacity figures.

Sets of ten 6"x6" handsheets weighing one gram apiece were made up for each condition investigated. These sheets were inspected by transmitted light and the specks counted, estimating their size, using d'Clark's Dirt Estimation Chart. The specks were grouped into three classifications:

Dirt-Extraneous matter, not fibers, having a color contrasting to the sheet. Examples: Bark, cinders, rust, etc.

Data

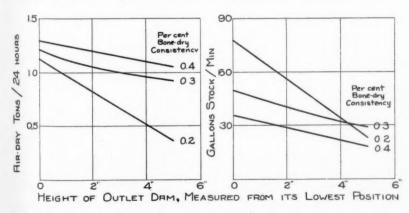


Fig. 4. Relation of Screening Capacity to Height of Outlet Dam.

Width of Slots = 0.008" Length of Stroke = 3/16" Speed of Stroke = 606 per min Distance from top of dam at its lowest position to

face of plate = 4.7" surface of stock = 8" Shives—undisintegrated pieces of fibrous material having a contrasting color to the sheet (under reflected light).

Shinners-undisintegrated pieces of fibrous material having a color similar to the sheet (under reflected light).

This classification does not mean to infer that the shinners are dirt or that they are detrimental to the pulp. The number of shinners, however, is indicative of the number of optimum sized fibers passing through the slots and being present in comparatively large numbers provides an accurate basis for comparisons. Dirt and shives being fewer in number sometimes fail to indicate the trend. The counts are based on the total area of the specks rather than the number of specks. As dirt is objectionable in proportion to its size, it is felt that this presents a truer picture of the relative cleanliness of the stocks.

Figure 5

• Figure 5 shows the effect of screen plate size on cleanliness. Sheets were made from the stock accepted from each of the plates and one set from stock flow-ing over the plates. The dirt counts of the accepted stocks are indicative of the amount of dirt which passed through each plate. The dirt count of the unscreened stock is indicative of the total amount of dirt in the stock being screened. The ratio of the screened count to the unscreened count is the per cent of the total dirt which passed through each screen. The lower curve of figure 5 is a plot of this ratio. It clearly demonstrates that one never gets 100% effi-ciency in screening, only a percentage re-moval which varies with the impurities furnished the plate. This curve does not readily distinguish between the individual plates, so the dirt count of each plate was divided by the dirt count of the plate having the highest count and this ratio plotted in the upper curve of the figure.

Figure 6 shows the effect of consistency on cleanliness. The curves are expressed on the same basis as those of figure 5. They bear out the supposition that the velocity of the stock effects the quantity of dirt carried through the slots. The information they give should be interpreted as the outcome of tests made under certain specified conditions, the results of which are not necessarily indica-tive of over-all screen room operation.

Figure 7 shows the effect of changing speed on cleanliness. Here again, increasing the velocity through the slots increases the amount of dirt carried through. These curves represent counts on sheets taken immediately before and after changing the speed of the screen.

Effect on Power Consumption

Some power readings were taken incidental to the tests. The results are tabu-lated in tables 2 and 3. A point of interest is that for the same increase in capacity, a change in speed results in lower power requirements than a change

The subject of tailings is a field in itself, so will receive only brief mention in this paper. Tailings must be carried away in sufficient volume or the benefit of fine screens is lost. The percentage of tailings increases from the head to the tail end of the screens, which explains why screens have narrower slots at the tail end, why the force is diminished towards the tail

end, and why the stock is progressively diluted. All things being equal, the larger the percentage of tailings, the cleaner will be the accepted stock, and it is the eco-nomic factor which decides the balance.

Screening as an important step in the manufacture of pulp and paper demands its place in the thoughts and literature of the industry. Although the future may find flat screens supplanted by other equipment, right now and hence of con-temporary interest is information and data on their operation.

This paper has presented some data on

flat screen operation as a guide to those contemplating changes in operation where local data is not already on hand. The data is peculiar to the mill where the tests were made, but the trends and even the data, to an unknown extent, should be applicable to other mills.

Acknowledgement is made to Mr. O. E. Ericsson, Chief Chemist, for his assistance Table 1. Miscellaneous Factors Bearing on The Interpretation of Results.

Type of Pulp: Unbleached Sulfite, 4.5

to 5.5% C12 No.

Screen Room Set-up: Knotters, Rifflers, Flat Screens.

Flat Screens: Bronze vat, positive drive. Location of Test Section: Primary line of screens 16th to 25th screen plates. Screen Plates: 3/8" Type E, Chromium

plates, open back.

Open area of Screen Plates by measure-

0.006	59	plate	13.0	Sq.	Inches	
0.007	89	plate	14.9	Sq.	Inches	
0.008	99	plate	17.1	Sq.	Inches	
0.009	.,	plate	19.2	Sq.	Inches	
0.0106	200	mlass	25 6	C-	T 1	

0.0108" plate......25.6 Sq. Inches Table 2. Effect of Length and Frequency Stroke on Horse-power Require-

Strokes	Length of Strokes				
Per Minute	1/8"	3/16"	1/4"		
490	7.6*	8.6	10.1		
606	8.8*	10.3	11.4		
696	10.8*	12.2	13.8		

*The stroke was changed on only one of a battery of four screens driven by the same motor. Because the other three screens have a 3/16" stroke, only the power readings for the 3/16" stroke can

be used without correction. Table 3. Effect of Consistency on Horse-

power	Requirements.	
% Bone-	dry	Horse-
Consister	ncy	power
0.2		13.3
0.3		12.9
0.4		12.2
0.5		12.0

Sanitary Principles Governing Paper Food **Container Production**

· Widespread acceptance of paper containers for milk and milk products no longer depends solely on whether they will meet rigid sanitary standards, because numerous tests have proved that the average container on the market today can meet them easily, but on whether economies are effected by their

These facts were brought out in a re-port of the Milk and Milk Products Committee of the American Public Health Association on the "Sanitary Aspects of Packaging Milk and Milk Products," presented last month in Pitts-burgh at the annual meeting of the As-

The increased use of paper milk con-

tainers (it has been estimated that more than 1,500,000 are used daily) has been for the development responsible methods to insure their sanitary quality, the report stated, and to manufacturers paper containers goes credit for taking the lead in this public health advance.

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Paper manufacturers have established, the report said, an Institute at the New York State Agricultural Experiment Station, Geneva, N. Y., for the purpose of studying the sanitary condition of paper stock used for milk containers. According to the Institute's recommendations, the principles of sanitation which should govern the production and han-dling of paper containers, as summarized briefly by the American Public Health Association Committee, are:

1. Use of virgin pulp only.

"2. Pure process water and strict microbiological control of pulp and paper mills.

3. Suitable protection and wrapping

of finished board. "4. Mechanical handling of board and containers at conversion factories and

milk plants.
"5. Protection of board, moisture-proofing materials, and finished containers from careless exposure to hu-

man contact, contamination, dirt, flushing water or insects.
"6. Detailed knowledge and careful selection of all materials composing the container to avoid the possibility of in-corporating substances having germicidal or bacteriostatic effects, the use of which is prohibited unless they have been shown to be nontoxic to human beings

British Columbia Mills In Full Swing

and without effect on milk."

Midwinter finds all British Columbia pulp and paper mills in full production,

with a market for every ton produced.

The industry is now employing about 3,000 men directly, with a payroll be-tween \$13,000 and \$14,000 a day, and another 1500 are employed in auxiliary services such as logging, transportation and shipping.

Water for Power Plentiful in B. C.

Pacific Mills, Ltd., Crown Zellerbach subsidiary at Ocean Falls, made extensive alterations to its mechanical setup more shortage of water power. But this win-ter there is nothing more certain at Ocean Falls than the knowledge that, re-

be enough rain.

Rain fell at Ocean Falls every day in November and the amount that fell broke the previous record by seven inches. The previous record by seven inches. The previous record by seven inches. The previous feet feet and the seven feet and the seve rainfall fluctuated from a low of inches on November 6 to a high of 4.44

on November 28, the report shows. The average fall at Ocean Falls in November is 44.13 inches with an average maximum of 47.10 and a minimum average of 41.16.

Rain has been abundant at all B. C pulp and paper towns. There was such a heavy fall at Port Alice, where B. C. Pulp & Paper Co. operates one of its mills, that the pumping station was flooded twice causing brief shutdowns. Twenty inches of rain fell in fourteen

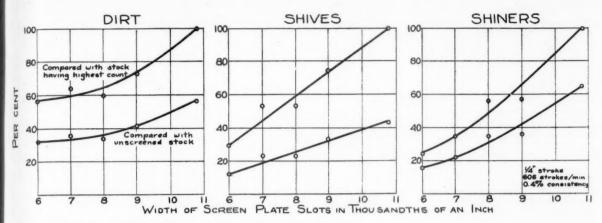


Fig. 5. Relation of Width of Slot to Cleanliness of Output.

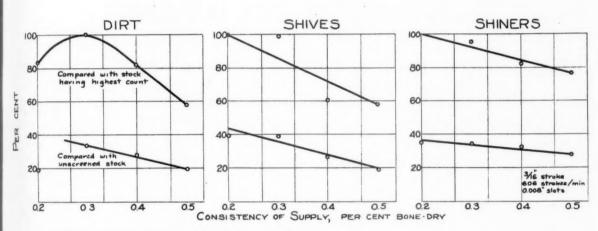


Fig. 6. Effect of Consistency on Cleanliness of Output.

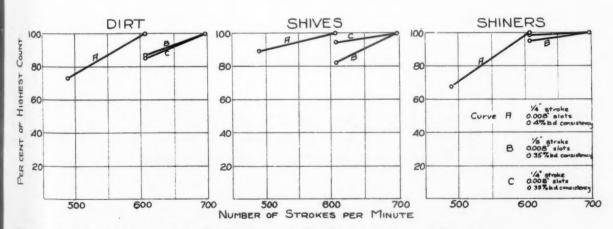


Fig. 7. Relation of Accepted Stock Cleanliness to Number of Strokes per Minute.

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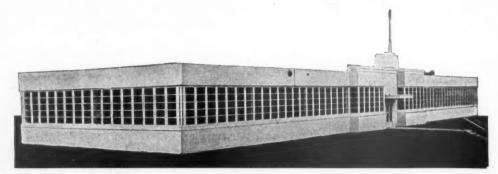
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Central Technical Control and Research Laboratory at Shelton, Washington

SENTINELS ON GUARD

The intensive vigil of our Technical Control and Research Laboratories is never relaxed. That is why we can furnish you, presently and on a continuing basis, the PULPS FOR TODAY, and assure you of the PULPS OF TOMORROW.

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The Wet Strength of Groundwood

by K. C. LOGAN*

N recent years the trend in newsprint manufacture has been towards greatly increased speeds and lower sulphite content. only are economies effected by this procedure but the lower sulphite content will improve some of the printing qualities of the sheet. With this combination of circumstances it is essential that the quality of the groundwood be as high as pos-The percentage of sulphite is so low that any variation in its quality can have only a minor influence on operation. It is therefore important that we have as many yardsticks as possible to measure the quality of groundwood, and one of these yardsticks is the wet strength

It has been realized for a number of years that the strength of groundwood, in the form of a wet mat, is of great importance in the operation of a newsprint machine. In Volume III of The Manufacture of Pulp and Paper, passing reference to this property is made but nowhere in the published literature have I seen a method described for evaluating this characteristic.

At Ocean Falls we have used the wet strength testing as routine control for almost three years. Naturally, the apparatus first constructed has been periodically improved in order to eliminate inaccuracies, make it simple in operation and give uniform testing conditions for all samples of pulp.

It is obvious and easily demonstrated that the sheet on a paper machine is in its weakest condition when it leaves the wire at the couch so that it is in this wet condition that the strength of the pulp is most essential as far as operation is concerned. I have established, by experiment, that as the sheet enters the driers it has less than one twentieth its strength when dried. Of course, at the couch it is still much weaker.

Dry and wet strengths are not necessarily parallel, e.g., we have found that the addition of sulphite

to groundwood may increase its wet strength much more than the percentage increase in dry strength. Also there is no clear relationship between the wet and dry strengths of pure groundwood pulps although in general, a pulp with high Mullen usually has a high wet strength. The mere fact that there is this difference in wet and dry strengths makes the determination of wet strength all the more important.

To make this test the pulp sample is formed into a sheet according to T.A.P.P.I. method 205 M. or other suitable method. The sheet is not given the second pressing, however, but is removed from the press and the wet sheet is subjected to a uniformly increasing pressure differential until it ruptures. The apparatus which we have developed to create this differential pressure and to measure it is shown in the accompanying sketch.

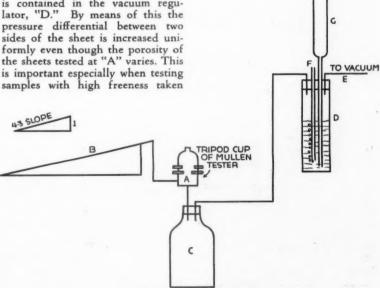
"A" is an orifice plate from a standard Mullen tester connected with tubing to an inclined manometer, "B," which is graduated to read directly in pounds differential pressure. "C" is a surge chamber to even out any little fluctuations in the rate of vacuum increase. The heart of the instrument, however, is contained in the vacuum regulator, "D." By means of this the pressure differential between two sides of the sheet is increased uniformly even though the porosity of the sheets tested at "A" varies. This is important especially when testing samples with high freeness taken



K. C. LOGAN

from the grinder pits or samples containing sulphite pulp. Its construction is as follows: Tube "E," which is connected to a source of vacuum, draws air out of the cylinder but since tube "F" is open at both ends, no vacuum is formed. But when the mercury is allowed to flow from Reservoir "G" into the lower cylinder by turning stopcock "H" it covers the lower end of tube "F" and a vacuum will begin to form. However, when the vacuum in the cylinder is greater than the height of the mercury above the bot-

H PTO VACUUM



^{*}Pacific Mills, Ltd., Ocean Falls, B. C.

Presented at the fall meeting of the Pacific Coast division of the American Pulp & Paper Mill Superintendents Association, held at Portland, Oregon, Dec. 1st and 2nd, 1939.

tom end of the tube, air ven's through it so that the resulting vacuum applied to the sheet at "A" increases at the rate that the mercury rises in the cylinder. This is regulated to the rate of one inch in three seconds plus-minus 1/4 second.

In operation the test is very simple. The wet sheet is stripped of its blotters and is immediately placed over the orifice and an enlarged Mullen tester cup is gently held over it. Then, by turning the stopcock "H," the bursting strength is determined by reading the maximum differential pressure shown on the manometer. Five pops are made and then it is dried in an oven and the bone dry basis weight is determined.

Wet strength %—
Avg. diff. pressure in lbs./sq. in.x100
Air Dry Basis Weight.

The working time and especially the elapsed time are much less than that required for the determination of the dry Mullen of a pulp. The actual popping of the sheets is very simple, there being only one stop-cock to operate. The results obtained are reliable and reproducible. Very little variation will be found in the pops of the same sheet and different operators give good checks.

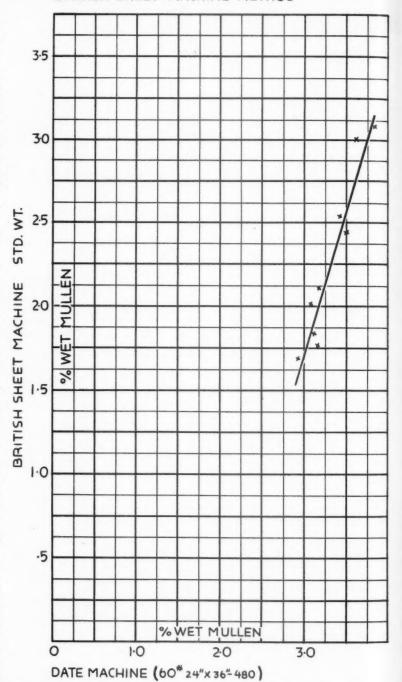
There are no gauges or mechanical parts which will give trouble and cause inaccuracies. The rate of rise of the mercury in the manometer is so low that the error due to mo-

mentum is negligible.

An investigation was made of some of the variables which do afect the accuracy of the test. It was found that the basis weight of the sheet was one of the biggest potential sources of error so that care should be taken in keeping the weight as near standard as possible. In this connection, the most desirable weight would be the weight of newsprint usually manufactured but 38 pound B.D. (24" x 36"-480) has been used in order to conform to the T.A.P.P.I. method. It has been found that there is a much greater fluctuation in wet strength when light sheets are made than when heavy ones are used. Care must also be taken that the blotters used are of the specified quality.

If the moisture content of the wet sheets used in the test is determined it will be found to vary with different types of pulp. Naturally, this has a bearing on the wet strength but it must be remembered that exactly the same procedure was followed in all cases so that this variation in moisture content is a characteristic of the pulp and that the

SHOWING GREATER SENSITIVITY OF THE BRITISH SHEET MACHINE METHOD



same variation in moisture content will be found at the paper machine as well as in the handsheets. Consequently this variable should only make the test more representative of the behavior of the pulp during processing.

Conclusions

This test gives information on pulp strength in the condition it is most critically required and will prove a useful guide for operating control and investigational purposes. The results are reproducible and quickly obtained. The apparatus is simple in construction, requiring very little care and can readily be assembled into a compact unit. ce se

Literature: The Manufacture of Pulp and Paper, Vol. III; J. Bardsley: The Pulp and Paper Magazine of Canada, Aug., 1939.

Rayon and other CHEMICAL USES OF WOOD PULP

Domestic Synthetic Fiber Situation for Third Quarter

During the third quarter of 1939 domestic producers produced a total of 77,800,000 pounds of rayon filament yarn, according to the Rayon Organon. This was six per cent above the 73,-600,000 pounds produced in the second quarter and 12 per cent over the 69,-400,000 pounds in the third quarter of 1938.

Production of viscose and cupra yarn in the third quarter amounted to 58,300,000 pounds, which was 27 per cent higher than the same period in the proceding year, and 13 per cent above the second quarter of this year. Acetate yarn production of 19,500,000 pounds was 17 per cent below the 1938 third quarter and 11 per cent under the current second quarter. This is attributed to a strike at one of the large acetate plants during August.

While third quarter rayon production totaled 77,800,000 pounds, domestic shipments during the period were 97,100,000 pounds. As a result, yarn stocks held by producers dropped 60 per cent, from 32,600,000 pounds at the end of June to 13,000,000 pounds at the end of September.

Staple fiber production in the United States for the third quarter stood at a new high at 14,700,000 pounds, 28 per cent above the previous record of the second quarter of 11,500,000 pounds.

The operating capacity of the rayon filament industry in November was 375,000,000 pounds, which will be increased to 390,000,000 pounds by the middle of next year. By the spring of 1941, total operating capacity should be about 405,000,000 pounds. These figures represent operating capacity, not actual production.

Rayon staple fiber yarn capacity is also expected to increase in the next 18 months. The current capacity rate of 65,000,000 pounds is expected to rise to 145,000,000 pounds by March, 1941.

Shipments of rayon yarn to domestic consumers for the first ten months of 1939 amounted to 292,400,000 pounds, an increase of 29 per cent over the 226,-200,000 pounds in the same period of 1938.

Rayon Production in Brazil

At present Brazil has three plants producing rayon yarn, all located in Sao Paulo. One establishment using the Chardonnet (nitrocellulose) process was producing slightly more than six metric tons (of 2,204.6 pounds each) daily in October; its daily capacity (120 denier) is about nine tons. Its production is confined to rayon filament. Another plant spins cellulose acetate yarns from cellulose acetate imported from France; it was said to have sufficient stocks of raw

materials for several months but is not equipped to produce cellulose acetate. In October its production was about seven tons daily.

The third mill produces rayon by the viscose process, using a mixture of wood pulp and hull fiber. Its daily production during October approximated six metric tons, or about 65 per cent of its capacity. Its output is said to be confined almost entirely to filament rayon, with the exception of a few hundred kilograms of staple fiber per day. The staple fiber is mostly shipped to a company in Rio de Janeiro for experimental purposes.

Increased Japanese Demand for U. S. Rayon Pulp Anticipated

War conditions prevailing in Europe with resultant shipping difficulties may force Japanese rayon interests to look to the United States and Canada for the bulk of its pulp imports during the remainder of the year, according to a report from the American commercial attache at Tokyo made public by the Forest Products Division, Department of Commerce.

Because of scarcity of foreign exchange, licenses for importation of foreign pulp in 1939 were issued to the extent of only 55,000 metric tons, 27,000 tons of which were to have been supplied by Scandinavian countries.

Recent information received in Japan indicated that the total volume of rayon pulp enroute to that destination and unshipped up to the end of August from Scandinavian sources totaled 23,000 metric tons. The amount of pulp from Northern European ports en route to Japan at the outbreak of hostilities amounted to 10,700 tons. The remaining 12,300 tons, intended for September-December shipments, will have to be shipped on neutral vessels via the Panama Canal or be replaced by American pulp, the report points out. Of the United States share of Japan's 55,000-ton order, 14,700 tons were reported unshipped at the end of August.

Because of the uncertainty regarding Scandinavian shipments, the Japanese rayon industry is said to have petitioned the Government to issue import permits for 30,000 metric tons of pulp from the United States and Canada and this petition is reported to have been approved "in principle." The Government approval, the commercial attache pointed out, is believed to be based on the assumption that it will be possible to obtain pulp on the same credit terms that were the basis of the contracts awarded in June, that is, six months after shipment.

Considerable optimism prevails in Japan regarding prospects for marketing an increased volume of rayon and staple fiber in foreign markets as a result of the war, so there is little possibility that domestic pulp production can be materially increased in the next six months, a greater volume of rayon and staple fiber output will only be possible if Japan's present pulp supply is augmented by further imports from the United States and Canada, the report said.

Italy Increasing Rayon and Staple Fibre Production

Exports of staple fiber from Italy to the United States during September amounted to 1,859,124 lbs. valued at \$293,767, as compared with 102,000 lbs. valued at \$15,735 in the same month of 1938. It is also understood that American buyers have placed orders for 9,000,000 lbs. of staple fiber for prompt delivery.

In 1938 Italy imported 145,000 tons of cellulose for the manufacture of rayon and staple fiber, but has since been importing less as new pulp plants are being built. Four new mills are under construction in Italy, one of which will be ready for operation early in 1940. The plant will use pine and chestnut wood for the production of "50 per cent soda cellulose."

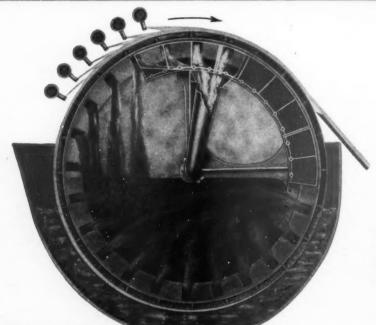
Study-Plan Bill on Stream Pollution Before Congress

The study-plan bill on stream pollution, S-685, has already passed the Senate, referred to the House and favorably reported out by the Committee on Rivers and Harbors. However, it still meets with opposition from numerous groups of the Izaak Walton League, which has generally advocated rigid control stream pollution legislation.

At Kalamazoo, Mich., recently, the Chamber of Commerce called a meeting of the League and of representatives of the pulp and paper industry, at which the position of both sides was put forth. The industry explained the impossible financial burdens of the control type of bill. After full discussion the League members voted to write their Congressmen stating their position had changed, and that they are now in favor of the study-type bill.

Charles W. Boyce of the American Paper and Pulp Association recently called attention to the fact that such action is of extreme value to the industry. Meetings similar to this, in which the Izaak Walton League members are given the real facts of the situation, might result in similar action being taken in other parts of the country, which would materially assist in obtaining sensible legislation which would accomplish the desired results without undue hardship on the pulp and paper industry.

Here it is' THE OLIVE



Note:

These drawings are intended only to help visualize the principle of operation. All minor details of construction have been omitted.

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Features:

Sharp separation of strong liquor and wash liquor, the latter passing out through the hollow valve adjustment pipe. Strong liquor flows into the drum and out through the trunnion.

Short liquor travel in each drum section which has center outlet; uniform sheet formation assured, resulting in highest washing efficiency.

Largest pulp filter valve capacity ever devised. The valve is an annular ring the size of the drum with two large ports for each section.

Special OLIVER low-pressure, nonclogging nozzles which apply a gentle fan-shaped spray.

Simple, external valve adjustment which can be operated while filter is running.

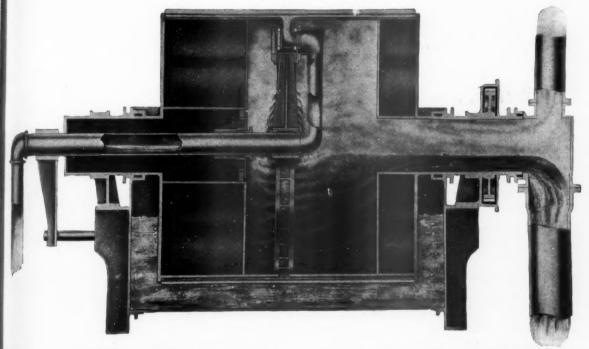
Drum acts as a receiver, separating liquid and air and allowing them to be discharged separately thus reducing foaming.

***By a few simple changes, the Washer can be transformed into a Decker. The basic principle of operation remains the same. High flows and high capacities are maintained.



BLACK LIQUOR PULP WASHER

Patents applied for



This new OLIVER Black Liquor Pulp Washer is a winner! A study of its design and principle of operation reveals several important features but perhaps the outstanding ones are:

- sharp separation of liquor and wash, cutting off the latter at any concentration;
- (2) minimum restriction to flow from sheet to trunnion.

This is not just a blueprint filter. It's the real thing, having been put through its paces in an eastern mill over a period of several months. Results indicate new highs in capacity and washing efficiency are assured.

OLIVER UNITED FILTERS



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Tariff Commission Continues to Pigeon-hole Wood Pulp Investigation

Commission bases refusal to complete wood pulp investigation on facts and conditions which in themselves are vital reasons why it should be done NOW. Senate should demand its instructions under Senate Resolution No. 160 be carried out promptly.

• Despite instructions from the United States Senate and appeals by the affected industry, the United States Tariff Commission continues to refuse to follow instructions given in Senate Resolution No. 160, calling for an investigation of the importation of wood pulp or pulpwood into this country and its effect on the domestic industry.

As reported in the October issue of this journal, the Commission on October 2 advised Vice President Garner that the report would not be completed for the time being, "unless the Senate gives instructions to the contrary." What effect such inthe contrary." structions would have is problematical, since the Commission already had instructions to make the investigation, and decided not to do so. The Senate resolution definitely stated that "the United States Tariff Commission . . . is directed to investigate and report to the Senate . . . not later than April 15, 1940." How further instructions could be more specific is difficult to see.

What the Tariff Commission has said, in effect, is "we won't follow your instructions. What are you going to do about it?" The industry, faced with the prospect of real difficulties in the future for lack of such an investigation, would also like to know what the Senate is going to do about it.

The original excuse for not completing the report quoted several factors such as increased prices, additions to domestic capacity, fall of exports to Japan and changed conditions in Europe. For full detail see the Commission's letter reproduced on page 7 of the October issue of Pacific Pulp & Paper Industry.

• The latest excuse is that conditions following the conclusion of the European war will not be the same as before and during the war. That

is undoubtedly true, and is one of the prime reasons why it is essential that the investigation be made now, ready for Congressional action before chaotic conditions again come upon the American industry.

In response to a letter on the subject from one in the industry as to why the investigation was postponed, the Commission replied:

"Among the considerations leading to the Commission's proposal to postpone completion of the wood pulp and pulp-wood investigation was the belief that Congress would not wish at present to take any action restricting the imports of these products in the light of the increases in prices and interferences with deliveries of imported pulps that have occurred as a result of the war. Moreover, we believe that conditions which prevailed before or after the outbreak of the European War may not be even approximately representative of those which will arise during the remainder of the war or after the war has ceased. It is quite possible, for instance, that during or after the war a sharp depreciation of currencies of pulp supplying countries or marked changes in costs here or abroad will dwarf such features of the trade as the domestic industry has in the past been principally concerned about.

"The Commission is keepin" informed on all developments in the trade in wood pulp and pulpwood and if any features of the situation seem to warrant consideration they will be called to the attention of Congress. Moreover, we propose to complete the investigation whenever conditions in the industry make this advisable; in any case, if a full report on these products has not been submitted to Congress when the European War ends, we will submit one as soon as possible thereafter. It seems to us that a report covering such conditions as arise at the close of the present hostilities will be of more interest to all concerned than one dealing with the trade and industry from the period covered by the former report to the present."

• The reply to this letter addressed to the United States Tariff Commission, Washington, D. C., presents such a comprehensive discussion of the question that it is reproduced here:

"I have noted with interest some of the considerations offered by the Commission as leading to your proposal to postpone completion of this investigation in the belief that Congress at the present time would not want to take any action restricting the imports of these products in the light of increase in price and interference in deliveries; and further, that you believe that the condition of upheaval now prevailing in the supply of woodpulp coming from Europe is of material consequence in the American pulp and paper picture.

"I would submit to your honored Commission that the purpose of the investigation is not that of seeking any unfair restriction or even an act of Congress at the present time. It is for the purpose of bringing up to date the very excellent work the Commission has done in the past on the subject, leading up to the completion of the report in 1936.

"The investigation at that time was lengthy and in many ways perhaps went into numerous details not now necessary but the American public and the pro-ducers and consumers of woodpulp in this country are entitled to know why, over a history of ten years, this particular industry so important in the employment of American labor and part-time workers on farms, has on three different occasions had to curtail its operations drastically to the detriment of employment in the United States, liquidation of stumpage to below cost of production, and failure to properly utilize the enormous waste available for pulp manufacturing, if sales of the product can be had in our own markets. These are the questions which Congress and the debaters pro and con on the subject want to know so that there might be an irrefutable statement of facts available from an unbiased Commission such as yours and these are the real purposes for the report requested under Senate Resolution 160.

"In this connection I would like to point cut to your Commission that it is more than the American pulp producer involved in this situation. First, of the eight million tons of new woodpulp consumed in the United States each year, over six million tons are produced by self-contained mills who have their own forest operations, enormous capital invested and they in turn are injured and

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their ability to operate and properly utilize our forests is impaired and adversely affected through curtailment necessary when the so-called converting mills in the the United States by virtue of price policies adopted by foreigners operating under a frozen free trade treaty, practiced to the destruction of the self-contained mills in the United States, to say nothing of curtailment in the relatively small pulp industry manufacturing woodpulp for sale to converting mills in competition with these foreign elements.

"No one can make an intelligent discus-

"No one can make an intelligent discussion on the subject unless accurate statistical data is made available through unbiased sources and it must be obvious to your Commission that the temporary influence of war has no bearing on the subject whatever and I do not think that Congress intended under that resolution that your report should cover anything except to bring the facts up to the date of

the adjournment of Congress.

"I am somewhat surprised at the solicitude of your Commission in taking the attitude that because of an unforeseen occurrence after the resolution was passed, namely the advent of war in Europe, it would be justified in deferring the investigation. As a matter of fact, the war in Europe has to date not seriously inconvenienced the pulp and paper industry in the United States as one of our large foreign suppliers is our Canadian neighors and the plant capacity in the United States is sufficient to take care of all the demand in bleached pulp in the United States.

"The Southern pulp industry the last few years has proven itself capable of taking care of a large percentage of woodpulp requirements for coarse papers. Wouldn't it therefore be of interest to your Commission to carry out an investigation, the purpose of which is to accurately portray the value of this industry to American employment and what has caused curtailment of the same, rather than to assume that it is more important to avoid giving the facts to Congress ahead of a disaster that may be pending when the war ends and Europe with its save labor and debased currency can again resort to its time-honored practice of underselling all American producers regardless of their costs in order to recapture the American market with its attendant stable exchange, a competition that truly no one can meet regardless of cost.

"It is for the purpose of having these facts firmly established in advance of another catastrophe in the industry such as experienced in the past two years so that Congress may at least have knowledge of the danger that exists and may in its wisdom eventually find a solution in order that Americans may work and produce goods which we ourselves consume, on American wage standards, rather than have a repetition of the experience we had in 1930 to 1934 and again in 1937 to 1939, where with the best plants in the world and an abundance of timber, either in the form of wasteage or natural over-supply seeking an outlet of some kind, we still were forced to operate at less than 50 per cent of capacity where as the Europeans and the Canadians were allowed to run at full capacity during these last two years and enjoy our markets.

"Before Americans can find a real solution to conservation of our forests we must find a method of properly utilizing them rather than liquidating them as they mature and get nothing in return. America's over-abundant forests (more than all the other countries in the world combined, excluding Russia) are sufficient (and I quote from United States Forest Service reports) to supply all of the wants of the pulp and paper industry in the United States if we are allowed to operate and practice good forestry methods and if there is an economic incentive in the utilization of these forest lands; but truly, one cannot expect an industry having a turn-over of a billion six hundred million dollars per year to forever sit idly by and permit slave labor wage competition to undermine the stable and normal progress of this valued industry in our national economy.

"I would certainly expect that your Commission would take pride and with appreciation of the public service you would render, carry out this order of Congress, now that an opportunity has been afforded your Commission to investigate and portray the true facts, so that in any debates that may come up on the subject whether this industry, so important to our national economy, should have the right to operate or not.

The influence of the foreign importing merchants, exercised over the past many years in such a manner as to distort the true facts and mislead public officials, ought to be answered in the form of a report setting forth the history of their activities enjoyed by virtue of a handful of important converters who always make money on cheap foreign pulp and undersell the real American pulp and paper industry so that it has become an industry which has to borrow money from the Government to exist or cannot find any new capital for expanding its production to keep abreast of the constantly growing demand for these products in the United States.

"I therefore most respectfully request your Commission to reconsider your proposition of deferring this investigation. The current war has no bearing on the resolution whatsoever and the findings are of utmost importance to the industry in the United States as an answer to the working men who are constantly harrassing management with: "why can we not operate to more than 50 per cent of capacity?"

"Management in the industry has been

"Management in the industry has been confronted with no end of problems due to the forced curtailment we have experienced in the past due to the maintenance of a large volume of imports into this country on a price basis impossible to compete with, to say nothing of methods of foreign selling practiced, as a result thereof we were unable to give the work that our industry is capable of contributing to our own economy and em-

ployment.

"In conclusion, I do not see how the Commission can put itself up as the judge of its capability of keeping Congress appraised on the developments in the pulp industry except through a report. Congress is interested in seeking nothing but an accurate statement up to date of what has transpired since the last report was issued by your Commission. The war has been on for approximately four months and yet there is no scarcity of woodpulp in the United States and the

industry is well supplied for the first quarter of next year at prices which are in no way out of line with the true cost of production in the United States."

● As so forcefully brought out, the present war and the conditions it creates at present and in the future, constitute no reason at all for delaying the investigation called for by Senate Resolution No. 160. To the contrary these facts are imperative reasons for completing the work while there is still time.

It is now up to the Senate to take appropriate action, as soon after convening as possible, assuring that the Tariff Commission carry out the Senate's instruction previously given, completing the report at the earliest possible date.

The opinion and attitude of one of our western senators, Senator Lewis B. Schwellenbach of Washington, is given in a statement made to Pacific Pulp & Paper Industry on December 8. He said,

"The position of the pulp industry today is similar to that of many other industries in which apparent short-sightednes upon the part of those responsible for
the guidance of foreign trade policies will
necessarily create disaster at the conclusion of the war. The action of the Tariff Commission in discontinuing its activities in investigating the problems of
the pulp industry—particularly those arising out of differences in foreign exchange—presents a most serious menace
to that industry when viewed from the
point of view of long-range policy. It's
all very well to blithely say that since the
pulp industry is in a condition of comparative prosperity as a result of the
war that the Federal Government should
temporarily wash its hands of those problems.

"However, such a policy completely overlooks the fact that the war isn't going to last forever. It overlooks the fact that the present business upturn in the pulp industry is necessarily temporary and probably more or less artificial. It seems to me that this should be the ideal time to make the study and the investigation. Certainly no one could justify delaying the investigation until a time when the war ends and the industry finds itself back in the depths of another depression."

One of the first duties of government is to protect its citizens, individually and collectively as communities and industries. This means economic protection and defense as well as military defense. In the case of the American pulp and paper industry, a government agency refuses to even investigate to determine what economic defense is needed, despite instructions from higher authority. It is high time that the Tariff Commission be required to recognize and fulfill its duty, and that the Senate see that its instructions are carried out.

\$70+\$1440+\$191=\$1701 saved on just 3 Machine

A PROMINENT PAPER MANUFAC-TURER found that blown fuses and motor burnouts were causing production to drag—and costing too much loss in man-hours, machine time and

maintenance expense. By replacing fuses with Westinghouse Nofuze protection, on just three machines, the saved a total of \$1701 a year...and here's the way they did it:

\$70 HERE

Every day, 3 or 4 fuses blew, 15 minutes lost each time, for 3 operators and 3 machines. Cost of lost manhours alone — \$1.35 per day — \$70 per year, plus idle machine time. One ABI Breaker reduced it to estimated five minutes loss per day, with no maintenance.

\$1.440 HERE

Any one of six motors burning out on this paper machine caused loss of \$125 per hour machine time, plus \$100 motor repair. Four times a year—the usual record—cost \$1,440.

All saved with Nofuze Breakers—not a motor burnout in $2\frac{1}{2}$ years.

\$191 HERE

The vertical pump motor used circulate material through the surfrequently stalled due to overlow Workmen blocked the fuses, tried force impeller with large wrent Frequent result — burnt-out motore a year, this cost \$1916 repairs. But a Westinghouse Notes Combination Linestarter stopped for the trouble and cost — permanently.





Perhaps you could make similar savings, speed up operations, improve products, with modern electric drives. Westinghouse will help you check your plant. Just call the local office, or write Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. Address Dept. 7-N.



Westinghouse



ELECTRICAL PARTNER OF THE PAPER INDUSTRY

Schmidt Lithograph Co. Creates Novel Attraction

Plain to be seen by all travelers over the greatest bridge in the world, is what is thought to be the largest thermometer on earth. The instrument is attached to the tower of the Schmidt Lithograph Company at Second and Bryant Streets, San Francisco.

For many years the late president and founder of the company, Max Schmidt, expressed the desire to erect a large thermometer on the building where it could be seen by people coming into San Francisco from the warm valleys of Cali-

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Because San Francisco has such a wonderfully cool climate he felt that this could be advertised in the best way by showing the temperature on a large thermometer that could easily be seen by all. Upon Mr. Schmidt's death it was found that he had left provision in his will for the erection of the instru-

The overall length of the thermometer is 31 feet. It is five feet wide on the main stem and the bulb portion is 8 feet in diameter. The numerals are 13 inches high and the entire thermometer weighs about 2,000 pounds.

There is a master thermometer on the north side of the tower building at the same level as 0 degrees, and this master thermometer operates neon tubes on the main thermometer which register the exact temperature at the spot.

The master thermometer consists of a spiral metal strip one inch wide and thinner on the outside than at the core. This contracts and expands with any temper-ature change. The slightest movement of this spiral strip puts in contact a small motor which slowly turns a steel shaft upon which are mounted 35 fibre disks, having a variation of offsets. It is these offset disks which make contact with the switches that light up or cut off the neon tubes which register the temperature. The lighting of the numerals at night is done by a time switch.



Powell River Fencing In Entire Property

The largest fencing project carried out in Canada in many years is now in progress at Powell River where the Powell River Co. has awarded a contract to the Lundy Fence Co., Toronto, for a chain link fence to surround its entire plant and other property in the company town

The fence will cost \$30,000 and vill require 100 tons of material, in addition to posts. The structure will be eight feet high and 14,000 feet in length.

The fence is being erected as a war-time measure to prevent sabotage.

New Westminster Paper Co. **Opened for Production**

Westminster Paper Co. has formally opened its \$125,000 addition to the plant at New Westminster, and production is now at a higher rate than ever before, according to Elmer Herb, vice-president and general manager.

Begun in October, 1938, the threestory concrete addition was finished several months ago, but only during the past month has installation of machinery

been completed.

The expansion marks another important step in the company's steady growth since organization in 1922. The plant was entirely rebuilt in 1930 following a was entirely rebuilt in 1930 following a disastrous fire the previous year. Now, with a total investment of \$1,250,000 and an annual payroll of \$200,000, the firm employs 170 men and women.

Annual purchases of the company, in-

cluding pulp materials and supplies, total approximately \$750,000. Most of the pulp is supplied by B. C. Pulp & Paper Co. so far as bleached sulphite is concerned. Powell River Co. supplies the unbleached sulphite, and Pacific Mills, Ltd., provide kraft pulp.

Primary purpose of the new addition is the manufacture of "MD" sanitary napkins for which a large sale throughout western Canada is being developed.

In addition, the company manufactures "Purex" and "Westminster" bathroom tissues, wax paper, fruit paper, paper napkins and bread wrappers, both plain and printed.

and printed.

J. J. Herb is president of the company, which also operates a subsidiary at Bellingham, Wash. F. F. Foote is treasurer, C. T. Radcliffe sales manager, J. N. Turvey secretary and R. C. Onkels

John Kiely To Be Married in January

John R. Kiely, Jr., resident engineer for Rayonier Incorporated at Fernandina, Florida, will marry Miss Margaret Lee of Jacksonville, Florida, the latter part of

The engagement was announced November 20th. Mr. Kiely, who is the son of Mr. and Mrs. John R. Kiely of Tacoma, Washington, was resident engineer for the Shelton Division of Rayonier Incorporated prior to his transfer to Fernandina

General Electric Issues **Bulletin on Little Known** Products

• The General Electric Company has recently issued a bulletin titled, "Little Known G. E. Products for Industry." It will be of interest to pulp and paper operators as well as to men in other industries. dustries.

That these products are little known indicates only that they are of such a special or unusual nature that their applications, while valuable, are not numerous in most instances. Included in the vices, which, although appearing to have laboratory uses only, have also found profitable applications to production rou-tines. Other items are designed for assistance in engineering studies and investigations, while still others are intended for production testing or inspection.

Some of the instruments with specialsome of the instruments with special-ized applications include the recording spectrophotometer, G-E Totalux, weft straightening control, magnetic analyzer, shaft-horsepower-hour meter, and Zahn viscosimeters.

Newsprint Stocks Decline From Year Ago

 Production in Canada during October, 1939, amounted to 280,985 tons and shipments to 289,260 tons, according to the News Print Service Bureau. Produc-tion in the United States was 78,591 tons and shipments 79,364 tons, making a total United States and Canadian news-print production of 359,576 tons and print production of 379,776 tons and shipments of 368,624 tons. During Oc-tober 29,450 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 389,026 tons. Total production in October, 1938, was 351,605

The Canadian mills produced 170,352 tons more in the first ten months of 1939 than in the first ten months of 1938, which was an increase of seven and 1938, which was an increase of seven and nine-tenths per cent. The output in the United States was 116,910 tons or seventeen and six-tenths per cent more than in the first ten months of 1938, in Newfoundland 39,364 tons or eighteen and six-tenths per cent more, making a total increase of 326,626 tons, or ten and seven-tenths per cent.

Stocks of newsprint paper at the end of October were 192,609 tons at Ca-nadian mills and 15,923 tons at United States mills, making a combined total of 208,532 tons compared with 217,580 tons on September 30, 1939.

Fernstrom Paper Company **Moves Offices**

· Early in November the offices of the Fernstrom Paper Company were moved to 582 Market Street, San Francisco. Mrs. M. Buchan is manager of the San Francisco office.

Developments in the Paper Making Machine—1930-1940

by J. E. GOODWILLIE*

T the beginning of a new decade it is interesting to pause for a moment and look back, over the developments that have occurred in the ten-year period. For many of us, the years from 1930 to 1940 have not been easy ones. At their start, the so-called depression had just begun; probably it ended somewhere along the way but our recovery was so slow and uncertain that new undertakings were usually viewed with alarm. It would seem that conditions were not very favorable for any great progress in an industry as old as paper making.

Before trying to measure the progress that has occurred and in order to date a little more definitely in our minds the start of this period, we might consider that here in the Portland area construction of the Weyerhaeuser pulp mill at Longview was just beginning. The Longview Fibre was a two-machine mill. The rebuilding program at Camas that had involved the installation of three new machines was just being completed. The second machine at St. Helens had been running only a short time. Also, but probably without helping our consideration of paper machinery developments, we might mention that in 1930 Franklin Roosevelt was living at Albany with the title of Governor of the State of New York and Adolf Hitler was living at Munich with no title at all.

In establishing a measure of development for paper making machines at any date, it is probably best to consider the performance of the best group in each classification, without placing too much emphasis on individual machines. On this basis, it is considered that newsprint machines in 1930 were operating efficiently at speeds of from 1100 to 1200 feet per minute. There has probably been the least opportunity for major improvements in these machines of all the classifications considered, due to the marketing condtions prevailing on this conti-nent for newsprint. In spite of the In the second classification, machines on printing papers of the book and magazine grades, the machine improvements made and the resulting production increases have been very impressive. From operation in the 350 to 400 feet per minute range, these machines have come up nearly 50 per cent to operate between 500 and 600 feet per minute.

Machine Coating

• While the subject of machine coating has been well covered in recent literature, we must mention it here as a development of this decade. It is now possible to apply coating to one or both sides of the sheet in amounts varying from a filling of the surface to a coverage strictly comparable with that applied by the older coating machines. The fact that this is done as a part of the paper machine operation and at speeds in the 600 to 700 feet per minute range makes it particularly impressive.

Kraft paper mills in 1930 were considered to be operating satisfactorily if their 30-pound bag paper was run at from 800 to 900 feet per minute. Equivalent conditions today call for speeds of from 1200 to 1300 feet, another case of an increase approximating 50 per cent.

The greatest daily tonnage output from single machines is being produced by Fourdrinier kraft board machines. The records made are particularly apt examples of what can be accomplished by close attention to design details, fitting the machine to its particular duty. On .016 solid kraft liner board, the daily production per machine has been increased from about 250 tons in 1930 to over 400 tons today. In terms of machine speed and on the lighter weight .009 board, good operation today is in the neighborhood

of 1100 feet per minute; this on a sheet weight of from 75 to 85 pounds when measured by kraft paper basis. res

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In passing, mention should be made of the rapid strides in the bleaching of kraft pulp during the last few years. This has opened new fields for kraft pulp in food containing paper and board, and also in the white paper field generally.

Fourdrinier tissue machines have shown good improvement during this period. Flat tissue made at about 800 feet in 1930 is now run at nearly 1000 feet. Creped tissue has gone up from 1000 feet to over 1300 feet, in terms of wet end speeds.

Yankee machines have been particularly responsive to modern improvements. Taking as an example a 25-pound MG sheet that would have been run at about 325 feet per minute in 1930, we would find its equivalent run today at about 450 feet. As a side light on the effects of specialization and refinement in design, some dry-creped tissue made on Yankee machines is run today at wet end speeds well over 1500 feet per minute.

Pre-dryers, installed between press section and Yankee dryer, are used to good advantage in today's machine. On certain types of paper they have made operation in the 700 to 800 feet speed range possible on sheets of about 25-pound weight.

Cylinder board machines in this ten-year period have also increased operating speeds and production. On .016 liner, typical machines of 1930 were operating at 360 feet per minute while today the corresponding speed would be about 420 feet. On the lighter weight corrugating sheets, operating speeds have stepped up to over 500 feet per minute.

Rubber Suction Press

With these figures before us, it is obvious that the paper making machine has made good progress in these years between 1930 and 1940, in spite of major disturbances in what has been called our national economy. When we compare rep-

*Beloit Iron Works, Beloit, Wist Presented at the fall meeting of the Pacific Coast division of the American Pulp & Paper Mill Superintendents Association held at Portland, Ore., Dec. 1-2, 1939.

fact that only two new newsprint machines were put into operation during this period and very few machines were rebuilt to any substantial degree, the comparatively minor improvements made have raised the efficient operating range to the 1250 to 1350 level.

resentative machines of today with the corresponding machines of 1930, the most outstanding change is the universal acceptance of their rubber

covered suction press.

The rubber covered suction roll had not been developed in 1930 but several installations were made in 1931 and these rolls began to establish the improvements in performance and economies in operation that resulted. Freedom from felt and roll marking and a greatly improved felt life were characteristic of these installations and of the many that followed. Perhaps the importance of this development can best be illustrated by the fact that there are today over 350 rubber covered suction presses in operation.

It is usually difficult to obtain an exact measure of the effect on machine production when an improvement is made because in the ordinary course of events an extended period of time is required to bring the machine up to the point where the full possibilities are realized. For this reason, full credit often is not given to the real source of the improvement. This fact was recently brought home to the operators of a Yankee machine that had been equipped with a rubber covered suction press a number of years ago. The suction roll eventually needed a new cover and it was decided to substitue a plain press while the recovering was being done.

Within a few days there were loud cries for speed in the recovering—they had discovered that the suction press meant about one-third more speed and that they were continually on the verge of bad felt marking throughout the time the plain press ran. In another similar instance the operators reported that re-installing a plain press while recovering a suction roll meant that they lost several times the equivalent of a spare rubber covered press shell during the operation.

The Dual Press

• A press section development that belongs entirely to this decade is the Beloit Dual Press. The first Dual Press was put into operation in 1936 and there are now some 40 operating or in construction. Combining in a single unit the functions of both first and second presses, it has been successfully installed in a wide variety of Fourdrinier machines. Because of the general interest in this new arrangement and the publicity that followed, it is not necessary to elaborate here on its constructional details. We might mention that in moderate speed installations the combination of a rub-

ber covered suction roll as first in the three roll group, a hard center roll, and a plain rubber covered third roll is commonly used, this giving an action similar to that of a suction first press and a plain second press. Higher speed machines are usually provided with rubber covered suction rolls in both the first and third positions.

Increased operating efficiency has resulted with the dual press due to the shortened draws to and from the press and particularly due to the entire elimination of the draw from first to second press. In addition, there is the very obvious saving in space, which has been used to marked advantage in the rebuilding of existing machines. In one instance, the substitution of the dual press for conventional presses made possible the installation of a new Fourdrinier having a 12-foot longer wire and 10 additional dryers. With these changes and other minor improvements, as well as stock preparation equipment, the machine speed was increased approximately 60 per cent.

Quite recently several installations of the dual press have been fitted with fourth rolls arranged to press against the first suction roll at the top-center position. With this arrangement, a double box is installed in this suction roll providing two vacuum areas, one under the added roll and one at the nip with the center roll of the press. The added top roll is covered with comparatively soft rubber and acts to give the sheet a gentle, preliminary pressing before it passes to the center roll nip. Through this action, greater water removal, less chance for marking, and longer felt life are secured.

Cylinder machine suction roll developments during this ten-year period have been of equal imoprtance to those occurring in the Fourdrinier field. The first suction drum press went into service in 1935, and there are now over 45 installations These rolls are of in operation. comparatively large diameter with a wide suction area, and a special shell drilling is used to provide for the handling of large water columes and at the same time permit the operation of a pressure roll. They therefore combine functions that might be compared with those of the suction couch and the suction first press in a Fourdrinier machine.

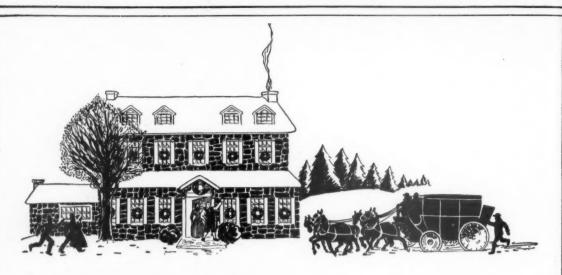
On typical liner and chip board the suction drum press receives the sheet and felt from the last cylinder mold and brings the sheet up to a 26 to 28 per cent dry condition, thus accomplishing the work formerly done by a battery of helper presses. Crushing and blowing have been practically elminated, even on very heavy sheets, and there has been a notable improvement in felt life. In several recent installations two pressure rolls having rubber covers of different degrees of hardness are used with the suction drum press and present indications are that this results in a further increase in effectiveness.

Suction press rolls are being used as primary presses, main presses and second presses in cylinder board machines, the number used and their positioning depending largely upon the machine speed and character of the board run. Installations at the second press have been particularly successful, this due in part to the conditioning effect on the second press felt.

Other Sections Improved

• While the application of suction rolls to paper machines during these years from 1930 has produced outstanding results, it will be obvious that their full possibilities could not have been realized if the machines so equipped had not been correspondingly improved in their other sections. This is particularly true of the high speed Fourdrinier machines. Highly developed roller bearings, properly lubricated and well protected from water, rolls accurately balanced for the higher rotative speeds, improved table rolls and water deflectors have all been essential parts. Interesting problems have arisen in connection with the high speed shake equipment because we have here the double requirement of light weight and strength. The newer shake arrangements permit of varying the amplitude at different points along the wire length to suit the formation conditions. In this period the Fourdrinier wire length has increased somewhat; as a generalization it might be said that typical machines would show approximately an increase of 10 feet in total wire length. The suction box section tends to be longer, and more attention has been paid to smooth and positive oscillation.

With the increases in machine speeds, slice heads have naturally been greatly increased and taller head boxes required. No one has felt well satisfied with the head box design, looking on them as necessary evils and hoping for something that would eliminate the open head box entirely. For several years some of our tissue machines have been operating at high speeds with entirely enclosed pressure slices, showing very good results on their types of (Concluded on page 43)



A Greeting Old--To Friends Both Old and New

To all our friends we wish good health, And happiness each day.

We hope that both success and wealth Their labors will repay.

And so we send this greeting old--But none the less sincere--

A Very Merry Christmas And a Prosperous New Year.

Stebbins Engineering Corporation



Japanese Pulp Supply and Demand in 1938

• Wood pulp production in the Japanese Empire amounted to 955,228 long tons during 1938, an increase of 68,250 tons or 7.7 per cent over the 1937 output. The 1938 production, however, was 46,000 tons short of the goal of 1,001,228 tons, which was officially established during the early part of the year. The production of wood pulp for the manufacture of paper amounted to 851,876 tons, an increase of 22,192 tons over the 1937 output, while the production of rayon pulp showed a sharp gain from 57,294 tons to 103,352 tons. Despite the gain in rayon pulp production, it is believed that the 1938 output of pulp fell short of the established goal due to the failure of certain rayon pulp mills to meet anticipated schedules. In any event, Japan's wood pulp production during the last year was a record for the country, and it is probable that the output during the current year will be even greater, as the Department of Agriculture and Forestry has estimated the 1939 production at 1,125,000 long tons. Details showing the trend of Japanese wood pulp production during recent years are summarized briefly in the following table:

Increase Due to Sulphite

• The heavier volume of wood pulp production in the Japanese Empire during the past year was due almost entirely to the increased production of sulphite pulp, the output of this type amounting to 508,212 long tons, compared with 454,773 tons during the previous year. The production of ground pulp increased by 12,269 tons to 380,993 tons, while kraft pulp output fell off by 225 tons to 63,256 tons. There was a sharp increase in the production of soda pulp, as the output of this grade, which had previously not entered into the supply and demand calculations, was reported at 2,767 tons. Details showing the production of pulp, by kinds during the period 1936-1938 are given in the following table:

Pulp Consumption

The consumption of wood pulp in the Japanese Empire is estimated to have amounted to 1,271,253 long tons during 1938, a decline of 43,946 tons of 3.2 per cent compared with the previous year. This adverse trend was entirely the result of restrictions placed on the use of paper pulp, the consumption of which dropped from an estimated 1,038,074 long tons in 1937, to 945,166 tons in 1938. Despite the curtailment of rayon yarn and cellophane paper production, the demand for rayon pulp increased sharply due to the tremendous expansion of the staple fiber industry. This latter development was brought about by the efforts to curtail domestic raw cotton consumption by encouraging the use of mixture of cotton and staple fiber yarns.

No official or trade figures are available on paper pulp consumption during the past 2 years, but it is possible to estimate the total consumption of this type of pulp by using the known consumptive figures of the Japan Paper Manufacturers' Association. During the years 1934-1936 paper pulp consump-

tion by the members of this association amounted to 88.7 per cent, 88.1 per cent, and 87.7 per cent respectively of the total paper pulp consumption which was reported by the Forest Bureau of the Department of Agriculture and Forestry. In estimating the total paper pulp consumption for the years 1937 and 1938, it has been assumed that the consumption by the members of Japan Paper Manufacturers' Association has represented 87.0 per cent and 86.0 per cent respectively of the total amount which was used during those years. On this basis, paper pulp consumption has been estimated at 1,038,074 long tons for 1937 and 945,166 long tons for 1938. Details showing the trend of consumption during the past 5 years are given in the following table:

The consumption of rayon pulp amounted to 326,087 long tons in 1938, according to the trade reports of various consuming industries. Compared with the previous year, the 1938 consumption showed a gain of 38,962 tons, which was

due almost entirely to the increased demand for pulp from the staple fiber industry as the consumption from the rayon and cellophane industries was below the 1937 level.

Stocks Underestimated

A survey of all available factors entering into the wood pulp demand and supply during the past 5 years indicates that certain trade reports regarding yearend stock figures have been far from reliable—there having been a definite tendency to underestimate the available supplies. Fortunately, the Department of Agriculture and Forestry published total wood pulp stock figures up to the end of 1936, and from the information available from this source it has been possible to arrive at fairly accurate estimates of the stocks carried over at the end of 1937 and 1938. The stock of wood pulp in Japan at the end of 1938, excluding stocks in customs warehouses not yet officially cleared and shown in the import returns, amounted to only

Japanese Production of Wood Pulp

	(In Long	g Ttons)		
Year		Paper pulp	Rayon Pulp	Total
1934	***************************************	691,836	17,160	708,996
1935	***************************************	724,042	33,435	757,477
1936	***************************************	747,356	55,209	802,565
1937	MMRSP4000000000000000000000000000000000000	829,684	57,294	886,978
1938	**************************************	851,876	103,353	955,229
1939	(Estimate)	924,000	201,000	1.125.000

Japanese Wood Pulp Production, by Kinds

Sulphite	1936 416,695 334,052	1937 454,773 368,724	1938 508,212 380,993
Kraft Soda	51,818	63,481	63,256 2,767
Total	802 565	886 978	955.229

Consumption of Paper Pulp in Japan (In Long Tons)

Year		Consumed by Member of Japan Paper Mfg.	Other	
		Association	Consumption	Total
1934	W#45157555555555544465744458465555555555	697,944	88,455	786,399 (*)
1935	***************************************	743,942	100,003	843,945 (*)
1936	***************************************	790,125	110,451	900,576 (*)
1937	****	903,135	134,939	1,038,074 (**)
1938		812.843	132,323	934,166 (**)

Notes: (*) Reported by the Forest Bureau of the Department of Agriculture and Forestry.

(**) Estimated.

Year-End Wood Pulp Stocks in Japan (Estimated)

	(III LOII	R I OHS		
Eend	of:	Paper Pulp	Rayon Pulp	Total
1934	***************************************	145,324	48,200	193,524 (**)
1935	***************************************	168,993	74,000	242,993 (**)
1936	***************************************	172,957	112,239	285,196 (**)
1937	***************************************	140,697	173,007	313,704
1938		77,112	64,385	141,497

Notes (*) Based on actual reports of trade associations up end of 1937.

(** Total wood pulp stocks were officially reported at 204,300 long tons at the end of 1934, 242,500 tons at end of 1935, and 272,663 tons at end of

141,974 long tons, a sharp drop from the 313,704 tons which are estimated to have been carried over at the end of the previous year. Stocks of rayon pulp fell from 173,007 long tons to only 64,385 tons, while paper stocks fell from 140,697 tons to only 77,112 tons. The trend of year-end wood pulp stocks during the past 5 years is shown in the following rable: lowing table:

Pulp Imports Down

● In 1938 Japan's wood pulp imports reached the lowest level since 1932, total arrivals amounting to only 143,817 long tons, in contrast to the 1937 arrivals of 466,730 tons. Imports of rayon pulp were the lowest since 1934, mamely 114,112 tons, compared with 290,599 tons

in the previous year, while paper pulp arrivals were the lowest since 1918, amounting to only 29,705 tons, com-pared with 176,131 tons in the previous year. This development was due entirely to the restrictions which prevailed on wood pulp imports throughout the year. Details show the trend of Japan's pulp imports during the past 5 years are given in the following table:

In 1938, the United States supplied 35.8 per cent of the total volume of Japan's imports of pulp, 37.4 per cent of the country's requirements for imported rayon pulp and 30.0 per cent of the requirements for imported paper the requirements for imported paper pulp, in contrast to shares of 40.3 per cent, 46.7 per cent, and 28.3 per cent respectively during the previous year. (Office of the American Commercial Attache, Tokyo)

Imports of Wood Pulp Into Japan

Total
225,319
269,923
326,552
466,729
143,817

"Builders of Rayonier"

(Concluded from page 14)

- e Samuel W. McCutcheon, James McDonald, D. J. McFsyden, Earl McLane, Howard Maddux, George Main, Ferdinand Malchau, Vernon Mantle, Joe Mariani, Louis Mariani, Merton Mathewoon, Earl Miller, Henry Miller, Albert Mills, Guy Montgomery, Harry Moore, Jr., J. H. Morrey, Frank L. Morris, Grant C. Morse, Fleming J. Murray, Harry J. Murray, Erling Myhre.
- Steve Nastiuk, Riley Nelson, William Newman, Alfred Nichols, Percy Oakes, Cornelius O'Brien, John Ohlin, Edmund I. O'Neill, Herman Olson, John Olson, William Padgham, Charles F. Page, Frank Parkes, Dan Patterson, Dan Paulstick, John Pennington, Howard Peterson, Theo. Peterson, Frank R. Phillips, Fred Pinyerd, Fred Plantz, Frank Pollak, Elmer Pollock, Harry E. Powless, Charles Pringle.
- Henry Race, F. A. Radke, W. H. Rambo, Eugene Reed, K. S. Reid, Isak Reynoldsen, D. D. Rhebeck, G. M. Rhebeck, Louis Rickard, Chas. B. Roberts, Frank Robideau, John R. Roddy, Frank Rogers, Arthur Rollin, Elmer Romberg, William Rose, James L. Ross, Joseph Romberg, William Rose, James L. Ross, Joseph
- Waino, Saari, Frank Salo, Anthony Sanford, Merle F. Savage, Allen Sawby, Harry Scott, Myron A. Scott, H. A. Searles, Herbert Shane, Felton Sharnbroich, Ellis J. Shelevy, B. M. Simp-sott, Geo. Scinciair, Harry Smelling, Jack M. Smith, Guy Somers, J. Sparks, Lawrence A. Spaulding, H. A. Sprague, Harold Springer, Tony Stefani, Christian M. Steike, George W. Strawbridge, Merton Sturdevant, Clarence Sturdevant, Robert Sutherland.
- William L. Taber, Ernest Theriault, Ambrose Thomas, Clarence Thomas, Thomas O. Tiller, Harold Tinkham, Frank Todd, Mathew Trickey, William Van Brocklin, Floyd Vernon, Abe Vir-ginia, Ernest Virginia, Albert R. Walker, Fravel Walker, Harold H. Walker, George E. Wallis, Harry P. Wheeler, Vernie E. White, George Whiteshall, N. T. Widmann, Floyd Wilbur, Chester L. Wilson, Vera B. Window, Clifford Winston, Hallard Wournell, Hiram Wright, Charles H. Young.

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- John Eager, Peter Eitreim, Archie Ellis, Harold Emery, Robert Evans, Charles Farrell, A. J. Ferguson, William Ferguson, Fred Field, Wilbur W. Flint, Lloyd Foodick, Edward Fourre, Edward C. Fuller, Arno Griggs, Robert Gunter, Andy Harris, Herman Heinold, Japper Heminger, Axel Hendrickson, Clint T. Houpt, Obe Howard, Charles R. Hurst, Paul Hurst, John Husz.

- e Earl F. Jacobs, E. L. Jacobs, Earl Johnson, Kirk T. Jordan, M. C. Kaphingat, W. W. Kullrich, Edward Lankester, Henry Lehman, Archie E. Lemke, August Lessard, Victor Libby, Robert Little, Myron Lund, John McBratney, A. E. McLaughlin, William McLaughlin, John H. Marshall, Alfred Michaelson, Martin S. Michaelson, Edward Miller, Barney Morgan, Norman L. Morgan, Virgil Morgan, Vivian Morgan, Frank Murphy, Charles Norris.
- e L. W. Packard, Orin Parks, Fred Pauley, Ralph Pauley, S. V. Pearcy, Fred Peste, Cab Rains, Frank O. Robbins, James Rutledge, Har-vey Schroeder, T. J. Seljestad, Tony Servidio, J. V. Simpson, J. Emmett Senith, Curtis Sowers, Henry Steensen, James Stout, Frederick Stuck, Carl Swedburg, Elmer Sytsma, Albert Thomp-son, George Trowbridge, Clive Troy.
- A. S. Viger, Ralph Wagner, Charles L. Walton, A. Leonard Walton, Albert Weisert, Clarence Weston, Wilfred J. White, George Whittingham, Bernhard T. Winiecki, George H. Woodard, George J. Young, James Young, Wendell Young.

★ Five-Year Service Pins

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- Kenneth C. Calkins, George Cardinal, William Carlson, Harry A. Carlon, Charles Carroll, Arnold L. Cheney, Charles S. Cole, Ernest Cole, Jake Cole, George Cooper, Jr., William Cooper, Raymond Collins, George Cropper, T. D. Deer, Earl Dickenson, Mel J. Dobson, Fred B. Doherty, Chas. Droscher, George E. Durkee.
- Girard C. Eck, J. G. E. Ellis, Chas. Erickson, Berna Evans, T. J. Farrell, Fitchitt, K. O. Fosse, Jr., Albert Fryxell, Howard Fuller. David Getty, Clarence Gowan, Rex Greenly, Herbert Groshong, Rolla W. Halbert, Claude Hanlon, Louis Heitsuman, Harry Heyd, J. H. Holloway, Pete Holthusen, Harriet E. Hopkins, Lester Huntington.
- Pantangon.

 8 A. H. Jackson, Claude A. Jackson, Merritt Johnson, Woodrow Johnson, Harland Jordan, William Kempton, Maurice E. Kinsey, Harold Langland, Jack Lee, Roy Levett, Charles Loitz, William Lunsford, Robert McAloon, W. F. McCann, Colin McGregor, Claude McKenner, Arthur Mallon, F. D. Mathews, Pat Meuer, James G. Moore, Charles Morkert, Chester Morris, Edward Mullen, Albert Nordquist, A. L. Ny-
- e William Opalka, A. N. Parrett, J. Courtney Pauley, Marvin Pearcy, F. R. Pearson, R. M. Pickens, Franklin Pierce, Merrill Pierce, Pet Pillar, John Pinckney, Robert N. Pollock, Louis Powers, Chesley Pringle, Carl Rains, Louis Raymond, R. F. Robertson, Thomas Robertson, William Roney, Agnes Ronquist, James Roush, Nick Ruff, Steve Rupert, Gordon Russell.
- Frank Salmi, Oscar Sanderson, William Savage, Winston Scott, L. O. Seljestad, Phillip

Sharpe, Clyde Simmons, Rybern Simmons, D. H. Simpson, Walter J. Sivo, Cliff Skaar, Knute Skaar, Oscar Skaar, Martin B. Smith, Walter Spinharner, Wayne Stone, Glen Story, Walter Strickland, John struthers, Ernest Stuck, Wayne Stuck, Hugh L. Thompson, Alex Toney, Mike Toney, Alvin Tucker, Georgia L. Valentine.

• Floyd Watters, Georgie Watters, James Watson, Oscar C. Wilkie, Robert H. Williams, Lewis Wilson, Hagbert Wolden, E. H. Woodruff, Harry Woodraff, A. W. Wright, Ralph Wyatt, Jack Young, Elmer Yurkas, Peter N. Zopolis.

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* Five-Year Service Pins

© Oliver J. Ashford, Roy Boyd, John R. Burgess, Emilie D. Herman, M. B. Houston, H. E. Kerry, Edward T. *Kline, Madelyn Kurth, Rosett W. LeRoy, Norma Leslie, Yoshiko Nakai, H. W. Nightingale, Ethel Park, B. F. Patchett, Inex A. Rovere, May Schlichting, S. E. Seams, Edna Segerstrom, F. B. Stieg, J. D. Sullivan, F. C. Taylor, Edith Waldemar, H. Yamamoto.

*Fernandina Division
Decision to operate plants at Fernandina, Florida, and Tacoma, Washington, has made necessary the transfer of a number of the men whose names appear in this booklet under their original divisions.

Bob Petrie Representing The Black-Clawson Co.

R. T. "Bob" Petrie, well known and liked paper mill machinery man who has served the Coast mills for some years, is now the Pacific Coast representative of The Black-Clawson Co. of Hamilton, Ohio, owners of Shartle Brothers Machine Co.

Paper Production Continues Rise

According to reports of the American Paper and Pulp Association, the American paper industry operated at a pro-duction ratio of 97.3 per cent during the month of November, the highest for this month in some years. During 1939, the ratio has varied from a low of 75.2 per cent in July to the November high of 97.3. The average for the first 48 weeks of the year has been 84.3 per cent. For the same period in 1938, the average was 72.2 per cent.

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PAPER MACHINES (Concluded from page 38)

sheets. It may be of interest to report that a combined distributing arrangement and enclosed slice is now in process of development and that commercial applications are being tried out. The arrangement is such as to completely blend the flows from the screens, so no possibility exists of different consistencies coming to the slice across the width of the machine. It appears that fibre flocks can be eliminated and the heavy cross currents and swirls found so frequently with open head boxes will be a thing of the

Dryer Improvements

• In the dryer section, many mechanical improvements contribute to smooth operation and continuity of service. Heavy duty roller bearings so mounted as to accommodate expansion changes, insulated dryer journals to improve lubrication conditions, synthetic doctor blades to keep dryer surfaces clean but not scored, automatic felt stretchers with long travel to eliminate felt takeups, and heavy duty mechanical drives capable of high speed operation with practically zero maintenance. These last few years have found the Feeney felt dryer used in increasing numbers, particuarly on the heavy production machines. This arrangement applies felt dry-ers in the run of the felt, rather than on the return, so that the felt, after contacting the sheet on a certain number of dryers, is taken to the felt dryer, dried out, and returned to the next paper dryer in much better condition to absorb moisture. The Feeney dryers add materially to the drying capacity of the machine, and improve the dryer felt

As a contributing factor to increased production of Yankee machines, the new high pressure dryer design should be mentioned. After an extended development period, a 12-foot dryer was built to the new design and tested through a range of pressures that finally exceeded 200 pounds per square inch. A number of these are now in service, operating under pressures between 60 and 75 pounds.

Many of the newer calender stacks are of the open-sided construction with all rolls on anti-friction bearings, and with the doctors carried directly on the bearing housings. With this design, calendar plugging is almost eliminated and all of the rolls are readily accessible for removal when grinding is necessary.

Reels and winders are being designed more particularly for the intended service than ever before. A type of reel for some of the softer and more easily corrugated sheets is arranged to start the core on a constant speed drum and then transfer it, while winding, to a second position where the core is driven through its journal, thus compelting the winding under the same conditions prevailing in the older upright reels. When a break occurs, the reel is again brought in contact with the constant speed drum so the sheet can be picked up again with a minimum of broke.

A type of reel for heavy paper and board employs air cylinders to hold the core against the constant speed drum, both in the starting and finishing positions, so that any degree of hardness desired in the wound reel can be secured. Heavy duty winders are required for the machines mentioned earlier in this paper that produce 400 tons per day. Some of these winders are equipped with separate motor drive for their rider rolls, power operated ejector rolls and power operated shaft pull-The other extreme is found in high speed tissue machine winders that must run at over 3000 feet per minute on a light weight sheet.

We are probably all agreed that these last ten years have brought many changes to the paper making machine and to the industry. In spite of various adversities we have made considerable progress and an interesting time was had by all.

Rayonier's Tacoma Mill Resumes Full Operation

After a long period of inactivity, the pulp mill of Rayonier Incorporated at Tacoma, formerly the Shaffer Pulp Co. plant, went into full scale operation on November 30 for an indefinite run.

For several months prior to the open-For several months prior to the opening, 60 to 70 men were at work renovating the plant and making certain necessary improvements. These were for the purpose of enabling the mill to use cordwood. New conveyors, a chipper, etc., were installed. Previously the company used only logs as their source of chip supply.

Resumption of operations is attributed

Resumption of operations is attributed to the general improvement in business conditions, particularly in the rayon and cellophane industries.

cellophane industries.

As was past practice, the plant will ship the finished pulp to Shelton, where the Rayonier mill there will further refine and bleach it. The pulp is being transported by Foss Co. tugs and barges. General Superintendent George Cropper is in direct charge of the operation, with Ernest Lemley, who came here from

Port Angeles, as superintendent. George Durkee, who formerly was at the Ta-coma mill, is back from Shelton as chemist.

Tour foremen are Harold Hugging from Port Angeles, James Spout and Carl Roberts, both of Tacoma.

Everett Bleach Plant Plans Progressing

Plans for the new bleach plant of the Everett Pulp and Paper Company are progressing rapidly, and construc-tion work is getting under way. It is expected that the bleaching system will be completed and in operation in about six months.

The equipment is being furnished by the Pulp Bleaching Co. of Orange, New Jersey. This company will also supply the flat screen needed in the mill's improve-ment program, although they will be made by the D. J. Murray Machinery Co. in Wausau, Wis.

TAPPI Dinner January 9th

The next meeting on the winter schedule of the Pacific Section of TAPPI will be a dinner meeting, to be held at the Winthrop Hotel, Tacoma, Washington, on Tuesday evening, January 9th, at 6 o'clock.

Phillips Leaves Grays Harbor

W. C. Phillips of the personnel staff of the Grays Harbor division of Rayonier Incorporated, recently resigned to become assistant production manager for the Boeing Aircraft Co. in Seattle.

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Nev Two

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TWIN CHEST CYCLING DOUBLES YOUR CAPACITY

AND AT LITTLE EXTRA COST



It would be unbelievable if it were not being done. With the mere addition of a second stock chest for each pulping and refining unit, Shartle can double your pulping and refining capacity.

Like all good things, twin chest cycling is simple. As soon as one chest has been charged, a turn of a valve diverts stock to the second chest which is charged while stock in the first is being cyclifined. Then back to the first chest while the stock in the second passes on to the jordans.

Ordinarily, the pulper-refiner operates only while charging one chest... is down while the chest is being discharged. Using two chests, the unit operates twice as long, does twice the work, processes twice the stock. And yet the only additional equipment cost is the price of the second chest.

Have a Shartle engineer explain more fully. Write today. Shartle Brothers, Middletown, Ohio.

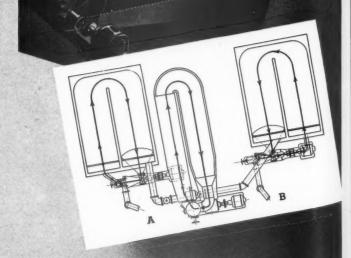


Diagram showing the compact errangement of twin chest cycling system. Twice the tannage pulped and refined at equipment cost of additional chest only.

Black-Clawson-Shartle

New York Dairy Introduces Two-Quart Paper Container

L. A. Van Bomel, president of Shef-field Farms Company, Inc., Metropolitan New York milk distributor, announced that the company, now in its 99th year of milk distribution, introduced on Monday, November 13, a revolutionary meth-od of distributing milk to the homes of New York City at a saving of approximately 10 per cent to consumers.

"Our new plan of distribution, reduced to the barest statement of fact,"
Mr. Van Bomel said, "is the distribution of milk in a two-quart single service con-tainer at a savings of three cents to the

Y

Behind that simple statement are years of research and months of experimentation. Ahead are fivefold benefits for the dairy industry and the people of the city it serves:

(1) Consumers will benefit because the economies of mass distribution should warrant the sale of milk at a reduction of 11/2 cents a quart.

(2) Producers will benefit because mass distribution and the consequent lower cost should enable the market to consume more fluid, whole milk—that is, class one milk which returns the dairy

farmer the highest price. (3) Public health will be strengthened because the lower price will enable con-sumers to buy and consume larger quan-

tities of milk.

(4) Our employes will benefit from the lesser degree of physical exertion required to handle the lighter-weight con-

(5) Consumers who buy only one quart a day can also benefit by taking milk in the new two-quart container every other day and effect a savings of three cents. . .

Our new, progressive and economical program is adequate testimony that we, as one of the leaders of the dairy industry, have been conscious that improvement in distribution would make milk available to more people at less cost. Our realization of the public's need has caused a ceaseless search for

technical improvement.
"Technical research has given us the single service container, which Sheffield Farms Company introduced in New York City ten years ago in the one-quart size. The single service container, probably better known to the public as the paper container, has developed in the past ten years. Its latest improvement is the two-

quart container.

"Six months ago we began an experiment with the two-quart container in Rockland County, New York. Our results in that limited area, as well as enthusiastic consumer response, have con-vinced us that the two-quart container could help us to solve some of the prob-

could help us to solve some of the prob-lems of the larger New York market.

"Although the manufacture of the containers is being increased with all pos-sible speed, it is still limited and exten-sion of their use to the whole city must be gradual. However, we hope to have spread the use of the new two-quart container to the entire five boroughs within a few months. Our introduction begins in Brooklyn. begins in Brooklyn.

"Several facts about the two-quart con-tainer deserve thorough public under-standing and appreciation:

(1) The container is perfectly safe and sanitary as substantiated by reports of the New York State Agricultural Experiment Station at Geneva, N. Y., after extensive research. Paper board is manufactured from pure virgin woodpulp. is already a sterile medium safe to hold milk. However, the paper board is coated with sterilized paraffin before it is filled with milk. The paraffin, which has a pure mineral base and does not contain any animal fat, is double assurance against contamination.

(2) The rectangular shape of the twoquart container uses refrigerator space efficiently and will enable housewives to keep two quarts of milk where one was

formerly kept.

(3) The two-quart container is light in weight and easy to handle in the kitchen because its corners offer a firm

(4) Because the container is used once and then thrown away, housewives do not need to wash bottles or keep them in the kitchen.

(5) The sanitary quality of the paper (2) The santary quality of the paper container and the perfect method of pasteurization, which was introduced commercially by Sheffield Farms Company, makes it possible for housewives to carry over safely an adequate supply of milk at all times and at less cost.

"All these advantages, plus a significant savings of approximately 10 per cent in the milk bill of every family taking advantage of the two-quart container, has convinced us that the con-tainer will be well received by the pub-The benefit of some of these same advantages will accrue to our operation also. Our delivery wagons will carry less deadweight; our route salesman will be relieved of part of the usual weight they carry up and down the stairs of their routes. The expensive and timeconsuming operation of returning empty containers to our plants for washing and sterilization before refilling will be eliminated.

"The savings which we are passing along to the consumer, however, will actually come from the growth in consumption which we expect the new method to encourage inasmuch as our savings in operating costs will be largely offset by the fact that the new container is more expensive than the glass bottle.

"We are confident, therefore, that the new two-quart container will produce substantial benefits for the consuming public and for producers. However, the two-quart container must not be considered a cure-all for all the troubles of sidered a cure-all for all the todologs of the dairy industry. Many problems will become less thorny, perhaps, as a result of our new method, but such perplexing situations as the unbalanced condition of production and consumption require more fundamental treatment than the two-quart container can give. The twotwo-quart container can give. The two-quart container is, essentially, the industry's response primarily to the urban milk consumers' demand for more milk at less cost."

Silklin Moves Los Angeles Office

 Silklin Paper Corporation recently moved its southern California office in Los Angeles from 405 East Second Street to 2900 East Eleventh Street. The new location provides ample warehouse facilities for the storage of paper stocks.

William H. Charbonneau is in charge of the southern California office of the company and is assisted by Mike Carter. Mary McBride is secretary. Freydig to Manage Tasmanian Logging

The Australian Newsprint Mills, Ltd., of Hobart, Tasmania, of which Louis R. Benjamin is general manager, have appointed Paul E. Freydig as manager of logging operations. Mr. Freydig, who made the preliminary report on logging of eucalyptus for the company several

of eucalyptus for the company several years ago, will leave San Francisco in January on the Monterey for Tasmania. To accept his new appointment Mr. Freydig resigned as vice-president in charge of logging and transportation of the Southwest Lumber Mills at McNary, Arizona. Mr. Freydig became associated with the Arizona lumber company after with the Arizona lumber company after his return from approximately a year in Tasmania.

Prior to his survey work for the Australian Newsprint Mills, Ltd., he was for a number of years woods manager for the Chas. R. McCormick Lumber Company and made his headquarters in Seattle. Mr. Freydig was prominent in logging circles and served as president of

the Pacific Logging Congress.

The newsprint mill of the Australian Newsprint Mills, Ltd., on the Derwent River near Hobart, Tasmania, will be completed in September, 1940, Mr. L. R. Benjamin said upon his visit to the Pacific Coast in August (For more details cific Coast in August. (For more details on this operation see page 18, Septem-ber, 1939, issue of PACIFIC PULP & PAPER INDUSTRY.

University Desires Back Copies

● In order to complete the duplicate journal files in the Bagley Hall library, the Department of Chemical Engineering of the University of Washington in Seattle, would welcome and appreciate gifts of back numbers of scientific and technical journals as PACIFIC PULP & PAPER INDUSTRY, Paper Trade Journal, Paper Industry, Chemical Abstracts, etc. Those desiring to present back copies to the library should write to Kenneth A. Kobe, Bagley Hall, University of Washington, for shipping instructions.

Elwell-Parker Introduce **New Scoop Truck**

The Elwell-Parker Electric Company of Cleveland, Ohio, has recently intro-duced an industrial truck equipped with a power operated scoop.

The new truck, which is supplied with either electric or gas electric drive, is designed to handle loose materials such as sulphur, salt cake or lime rock used by pulp mills. Any loose material may be handled by the scoop which holds from ½ to 1 yard and is capable of being rotated more than 100 degrees. Separate motors operate the scoop, the elevating mechanism and the truck. Provision is made for regenerative load lowering mechanism for returning power to the battery.

One man operates the truck. The scoop loads itself by impact and by crowding and rotary motion. It is designed, both by shape and by course of travel while scooping to undercut the pile.

Elwell-Parker are represented in the Pacific Northwest by Colby Steel & Engineering Company, Central Building, Seattle, and in California by Ira G. Perin, 200 Davis Street, San Francisco.

Talk Trade

of Those Who Sell Paper in the Western States

L. A. Millmen to Again **Entertain Needy Youngsters**

For the fifth time the Paper Mill Men's Club of southern California will be host to a group of underprivileged boys at a Christmas party given in their honor. This year's affair will take place December 20 at the Jonathan Club in Los Angeles.

Frank N. Gladden heads the committee Frank N. Gladden heads the committee in charge of the party and is assisted by Marvin A. Vanderheiden and Irvin E. Damon. The boys and members will be served a turkey dinner at noon. This will be followed by entertainment and the giving of gifts to the boys.

Master of ceremonies and principal speaker of the program were to be announced later. Past dinners have been featured by short talks from various outstanding football stars of the season.

R. W. Parkinson

Friends in the paper business were saddened to learn last month of the death of R. W. Parkinson, 51, who died at his home in Alameda after more than a year's illness.

Mr. Parkinson had been with the Crown Zellerbach Corp. for 20 years, and until forced to bed with his illness, had been manager of the service department of the corporation at San Francisco. He leaves a widow and four sons to mourn his passing.

Stork News

Ray Crist and Ken Franklin, both of whom served as hosts at the Crown Zellerbach Corp. booth at the Golden Gate International Exposition, became the International Exposition, became the fathers of baby girls last month. For Ray it was the second youngster, and inasmuch as the first was a boy it looks as though the Crists have the perfect family.

Specialty Paper Box Co. to Move to New Quarters

The Specialty Paper Box Co., now located at 6300 So. Compton Ave., Los Angeles, will occupy its new building at the corner of E. Gage and Avalon Blvd. about January 1. The new structure has 28,000 square feet of floor space.

Christmas Parties Planned

San Francisco Division and Headquarters, and Los Angeles Division, Zellerbach Paper Company, are looking forward to their annual Christmas parties. Both will be held Dec. 21.

The Los Angeles Division will hold Division will hold Division will hold Division will hold Division.

a Dinner Dance at the Breakfast Club.



E. H. WALTHERS Manager, General Paper Co.

E. H. Walthers became manager of the General Paper Company, San Francisco Division, Dec. 1. Mr. Walthers has had considerable experience in the paper business in the Northwest. Con-trary to our report of last month, Mr. J. W. Kelly continues with the General Paper Company.

Vanderheiden Flies East For Sales Meeting

Marvin A. Vanderheiden, sales representative for the Nekoosa-Edwards Paper Company, left Los Angeles December per Company, left Los Angeles December 6 by plane to attend a sales meeting of his company at Port Edwards, Wis. Mr. Vanderheiden expected to stop at Salt Lake City and Omaha en route. Following the meeting which was sched-uled for December 18, 19 and 20, he planned to fly home in time for Christ-

California Visitors

Ray X. Pfiffner, sales department, Whiting-Plover Paper Co., Stevens Point, Wis., was a recent San Francisco visitor.

L. R. Bennet, Inland Empire Paper Co., Millwood, Wash., spent some time last month visiting friends in California.

Lloyd Riches, Western Paper Converting Co., Salem, Ore., was a recent caller in San Francisco.

Jack Smith and Arthur Hosfeldt, Haw-ley Pulp & Paper Co., Oregon City, Oregon, paid California friends a visit last month.

C. A. Esty Tours West

C. A. Esty, president and general man-ager of the Carter Rice & Co., well known paper wholesaling house, who makes his headquarters in Boston, arrived in San Francisco early this month. In company with C. H. Beckwith, Pacific Coast manager of the company, Mr. Esty then made a trip covering all the Coast branch offices. DE

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Joe Heilbron

The host of friends of Joe Heilbron, many years ago connected with the Everett Pulp & Paper Co. and Blake, Moffitt & Towne, were grieved to hear of his death Dec. 4 at the Fairmont Hotel, San Francisco.

Mr. Heilbron, who for many years has conducted a most successful paper business in Manila, P. I., is survived by his

Long Service Recognized

Walter Eva, San Francisco Division, Walter Eva, San Francisco Division, Zellerbach Paper Co., who represents the company in the Salinas territory, was awarded his 35-year service pin last month. Paul Jones of the Los Angeles Division was awarded his 25-year pin.

Seaboard Takes Tag Line

Harry Bean, Seaboard Paper Co., San Francisco, has announced that his firm has taken on the Sorex tag line, manu-factured by the Sorg Paper Co., Middletown, Ohio.

Burchfield Wins Prize

Earl Burchfield, San Francisco Division, Zellerbach Paper Co., won a cash prize from the Holyoke Card & Paper Co. for his entry of a San Francisco hotel wine list done on Kroydon cover.

Informant Features Verse

The December issue of the Informant, Zellerbach Paper Company house organ, is unusually attractive. The cover is in is unusually attractive. The cover is in blue and gold, and the center spread is devoted to clever greetings in verse from the 16 Division Managers of the Com-

New Zellerbach Calendar

The sales promotion department of the Zellerbach Paper Co., San Francisco, has produced a beautiful calendar for

Natural color photography has been used to depict a typical scene in old Spanish California. The picture was taken in Santa Barbara. RY

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Paper Box Makers Stage Annual Banquet and Tourney

Paper box manufacturers of San Fran-cisco and the bay cities held their annual banquet at Lake Merced Golf and Counry Club on Thursday, December 7.
Ninety members and their guests, along with supply house men, were present.
This is the largest attendance recorded at this annual event, being three more than that of last year, which was held at the same club, and on which occasion 87 sat down to dinner.

A golf tournament was held in the afternoon, in which 43 participated as against 47 last year. The day was somewhat cloudy but in every other way it was ideal golfing weather.

On account of the number of entries, on account of the number of entries, four flights were made up, and valuable prizes were given for the first four in each flight, with the exception of the first flight, in which five prizes were given. The winners in each flight were given. The

First	Fligh	t

	Grs. Hdcap. Net		
Bill Higgins	75	5	70
A. Gardner	78	7	71
Cliff Mattos	80	8	72
W. L. Shattuck	83	10	73
T. Notaro	84	11	73
Second I	light		
W. H. Thomas	87	19	68
Bob Gates	87	18	69
J. A. MacLellan	91	18	73
Al. Church	93	17	76
Third F	light		
Cliff Allen	88	21	67
D. Jeffries	91	23	68
Geo. Stemple		22	71
Max Schmidt	95	20	75
Fourth F	light		
L. A. Thiebaut, Jr.	95	24	71
Leon Grosjean	98	27	71
Rd. Schmidt		25	72
J. Kelly	103	28	75
701 16 .	4.		

The golf prizes were distributed by Gus Trost, Fleishhacker Paper Box Co., who also officiated as handicapper and

Arrangements for the golf tournament and banquet were in the hands of a com-

mittee consisting of Ralph Comstock, Sam Platt and Gus Trost. They did an ex-cellent job, and the proceedings were carried through without a hitch from beginning to end.

Immediately following the banquet the guests were regaled with an excellent floor shows. The numbers included an noor snows. The numbers included an instrumental trio, a tap dancer par excellent, an accomplished juggler, and a songster of no mean ability. The program was rounded out with the singing of popular songs in which the audience took active part.

Mr. Cliff Allen, sales manager of the Western Paper Box Co., Oakland, and treasurer of the Pacific Coast Paper Box Manufacturers' Association, welcomed the members and guests to the annual banquet. He commented on the splendid attendance and remarked that the anattendance and remarked that the annual banquet and gatherings of a similar nature were largely responsible for the cordial feeling that existed among the members. Mr. Allen then called upon Mr. J. C. Meyerstein, attorney of the Pacific Coast Paper Box Manufacturers' Association, to address the gathering, who offered season's greetings.

This was followed by a drawing for

This was followed by a drawing for door prizes which had been provided by the entertainment committee. The prizes consisted of turkeys, hams, boxes of cigars, champagne, and many other use-ful and interesting articles and were won by those present who had the lucky number corresponding with the one drawn out of a bowl by one of the lady enter-

The winners, who had the pick of the prizes which were displayed in the dinprizes which were displayed in the dining room, made their selection as the numbers were drawn. The following gentlemen proved to be the holders of the lucky tickets and each one selected the prize he most desired in the following order: F. W. Kewell, Ad. N. Himes, John V. Manners, Louis M. Sutter, L. A. Thiebaut Jr., S. H. Woods, W. H. Patterson, R. Ohea, J. C. Meyerstein, Al. Church and T. Notaro, who had last choice.



RALHPH M. HOFFMAN

Link-Belt Promotes Ralph Hoffman

Mr. Ralph M. Hoffman, vice-president and sales manager of Link-Belt Company Pacific Division, San Francisco, for the last eight years, has been appointed assistant to the president of the parent organization, Link-Belt Company, with headquarters at the company's general office in Chicago, says an announcement by Alfred Kauffmann, president. It will be his duty to directly assist the president. president.

Mr. Hoffman, a graduate mechanical engineer, University of Minnesota, 1911, came to the Link-Belt organization in 1923 as manager of Link-Belt & Gott-fried Co.'s Seattle branch. He served in this capacity until 1931, the name of the Pacific Coast subsidiary meanwhile becoming Link Belt Company Pacific Division; and from 1931 to 1939 served as vice-president and sales manager of this subsidiary, with headquarters at San Francisco.

Mr. Hoffman's previous experience consisted of: 1911-12, apprentice machinist, Smith Cannery Machines Co., Seattle; 1912, draftsman, Superior Portland Cement Co., Concrete, Wash.; 1913-15, branch manager, Meese & Gottfried Co., Vancouver, B. C.; 1916, sales engineer, Meese & Gottfried Co., Seattle; 1917-21, vice-president, Hesse-Martin Iron Works, Portland, Ore.; 1921-23, manager Seattle branch, Meese & Gottfried Co.

Harvey V. Fastling, formerly chief

Harvey V. Eastling, formerly chief engineer in charge of engineering sales, has been named sales manager for the Link-Belt Company Pacific Division.

Milk Packaging Machine Attracts at Dairy Show

The new Ex-Cello-O milk packaging machine, designed especially for small or medium sized dairies, was displayed at the 1939 Dairy Industries Exposition in San Francisco October 23-28, and was in actual operation to show the dairymen the advantages of paper milk bottles.
This "Junior" machine is a standard

model and is to be put into operation in a western dairy.

Keith Frampton Working In Northwest Mill

Keith Frampton, son of Frampton, superintendent of the Cali-fornia Fruit Wrapping Mills plant at Pomona, Calif., is now working in the

St. Helens Pulp and Paper Co. mill. He St. Helens Pulp and Paper Co. mill. He had training in chemical engineering at Loyola and at the University of Portland. His plans are to finish his education and follow paper making.

D. H. Patterson Elected by **National Paperboard Group**

D. H. Patterson Jr. of Fibreboard Products, Inc., San Francisco, has been elected a director of the National Paperboard it was announced at the annual meeting in New York in November. He was also named on the executive commit-

Other western representatives present at the convention were C. J. Schoo of the Longview Fibre Co., and C. S. Rutherford of Fibreboard Products, Inc.

Ben Natwick Visits Camas

Ben Natwick, son of A. G. "Buff" Nat-wick of the Crown Willamette Paper Co., and who is now a research engineer for the Celotext Corporation in Chicago, returned to his home town, Camas, for a visit recently. Mr. Netwick has been working out in some of the company's mills in past months, but is now stationed in the Chicago office.

Season's Greetings:



Christmas this year finds all of us in America particularly fortunate,—at peace with our neighbors; at work with plenty to do; blessed among our friends.

... To You All, the Makers of TENAX FELTS extend these greetings:

A Merry Christmas and a Happy and Prosperous New Year

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Pacific Coast Representative: ALAN C. DUNHAM, Portland, Ore.



DOWN TO BRASS TACKS on the Tax Question

● Suppose we didn't have to pay taxes; then our new low rate schedule could be reduced that much more all along the line, starting at 3 4/5 cents per kwh, instead of the present 4½ cents. Wouldn't that be something!—especially when added to our \$700,000 annual rate cut effective September first.

Reddy Kilowatt

PUGET SOUND POWER & LIGHT COMPANY

Paper Cups Eliminate Worry

A new slant to use in selling paper utensils to proprietors of public eating and drinking places may be found in the discovery reported by Drs. L. A. Dick and G. J. Hucker of the New York State Agricultural Experiment Station in a paper, "A Presumptive Test for the Oral Contamination of Drinking Utensils," presented at the recent annual meeting of the American Public Health Association.

The bacteriologists found that practically all human lips have streptococcus salivarius on them, and that these same organisms can be recovered from the rims of glasses in public food and drink dispensing places. Though harmless in themselves the germs of streptococcus salivarius make a very useful index of how well glasses are washed between uses, and of how many more dangerous germs are likely to be left on the glasses through careless dishwashing.

This means it will be easier for the Health Department bacteriologist to check on careless dishwashing, and proprietors who want a good rating will find that single-service paper utensils will eliminate all worry on this score.



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ncreased Costs-in water-heat-labor-chemicals

aintenance Troubles—blinded wires—plugged felis

requent Clean-ups - slime breaks - poor sheet formation

bstruction of Lines - stock and white water lines

Recirculation Difficulties—slime growths in recirculated systems

echanical Strain on felts and wires-shortened useful felt and wire life

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When you equip your paper machines with Hamilton Felts you eliminate this cause of felt deterioration so long as your couch and rolls are kept true and clean. Hamilton Felts wear evenly, uniformly and very slowly and they remove water evenly, uniformly and very fast. Your cost system will prove that Hamilton Felts are the most economical.

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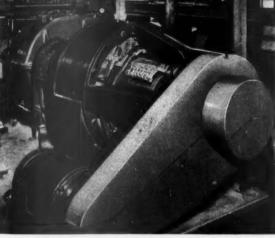
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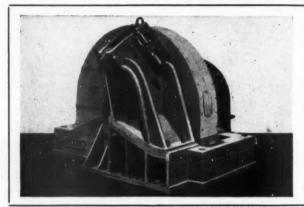
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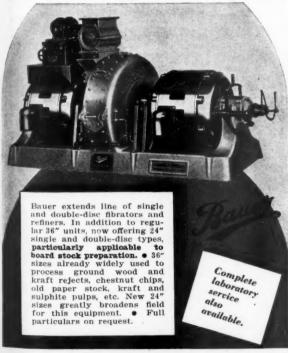
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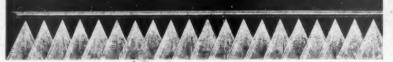
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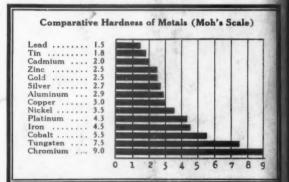
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